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ARTICLE I.—*An Account of the Yellow Fever which prevailed at Thompson's Island, in the year* 1824. By BENJAMIN TICKNOR, M. D., U. S. N.

[Concluded from page 233, vol. III.]

TREATMENT.

THE indications which directed the treatment, were drawn from the four periods or stages of the disease, and were, therefore, *First*, to put a stop to the cold stage, or stage of torpor; *Second*, to moderate re-action or excitement, when excessive, and thus produce a remission; *Third*, to prolong the remission, and either prevent a recurrence of the excitement, or render it less violent and of shorter duration; and, *Fourth*, to promote convalescence, when a tendency to a favourable termination was manifested, and to obviate the particular symptoms, which indicated a tendency to dissolution.

First. It rarely happened that I saw the patient soon enough after the attack to make use of any means for answering this indication; and when I had an opportunity, I was restricted to very few remedial agents by the great irritability of the stomach. The most effectual were a mercurial cathartic, and blisters or sinapisms. The cathartic consisted commonly of a scruple of

calomel, which was found to be easy for the stomach and effectual in its operation. When given sufficiently early, and aided by a large epispastic, or sinapism, immediately applied over the epigastrium, it seldom failed to rouse the torpid powers of the system, and bring on the stage of re-action. In all cases where the gastric irritability was considerable, these were the only means which possessed any degree of efficacy in cutting short the cold stage; but where there was an absence of all the symptoms, which indicate the actual presence or near approach of inflammation of the stomach, and where there was an incessant vomiting of bilious matter, accompanied with a sense of oppression in the epigastrium, I had recourse to emetics, and derived essential benefit from their operation. To those who have prescribed the use of emetics indiscriminately in yellow fever, this practice may appear highly reprehensible; but as I determined, when circumstances should require me to undertake the management of this formidable disease, to be governed by the symptoms as they might present themselves, rather than by any preconceived opinions, drawn from the speculations or experience of others; so, whenever I found emetics to be clearly indicated, I prescribed them without the least hesitation, and never had occasion to regret that I had done so. I need hardly observe, that a good deal of caution was necessary in prescribing them; for it was only in those cases, where there was reason to expect that the benefit resulting from unloading the stomach of its irritating contents, would counterbalance the irritation likely to be produced by the remedy, that emetics were admissible. Their good effects, in these cases, consisted, not in wholly arresting the progress of the disease, as they sometimes do in other febrile complaints; but in checking the vomiting, relieving the oppression at the stomach, and in causing a determination to the surface; thus, not only abridging the stage of torpor by inducing re-action, but also preparing the way for the more expeditious and effectual operation of the means for fulfilling the other indications.

Second. Re-action having taken place either spontaneously, or in consequence of the means which have been mentioned, it generally ran so high as to require depleting measures. Of these, venesection was the first and most effectual; and few cases occurred in which it was not required. Wherever I found a tense,

wiry pulse, however small it might be, accompanied with burning tenderness and oppression in the epigastric region; violent head-ach, with red, protuberant eyes, and a tumid, flushed countenance; a hot, florid, and dry skin; I had immediate recourse to the lancet, and used it freely. My rule was, to allow the blood to flow till manifest relief was experienced from all the urgent symptoms above mentioned. But the quantity which it was necessary to take to accomplish this, varied according to the circumstances attending the operation. When drawn in a full stream, from a large tense vein, and while the patient was in a standing or sitting posture, the loss of from sixteen to twenty-four ounces generally afforded the desired relief. It was only at that period of the disease, however, when re-action had just reached its height, that venesection was productive of this decided benefit. Indeed, it was only at this time, that it could be employed with safety; for if the disease continued its course, the powers of the system were very soon exhausted to such a degree, that a loss of blood, instead of retarding or averting, accelerated the patient's doom. A large bleeding, at the moment when the ardour of the febrile conflict had reached its height, seldom failed to calm the commotion of the system, and to prevent an unnecessary waste of the vital energy, by moderating the violence of re-action. To obtain the greatest degree of benefit from venesection, it was indispensably necessary to carry it so far at first as to make a sensible impression upon the disease, that is, till all the urgent symptoms, proceeding from the excess of re-action, disappeared; for if these salutary effects were not produced by the first, they never could be by any subsequent bleeding, the system becoming in a short time too much prostrated to admit of a further abstraction of blood. When I had an opportunity of seeing the patient sufficiently early in the disease, I rarely had occasion to bleed more than once; and by this one bleeding I was so fortunate in a few instances as completely to arrest its progress. But in almost every case, the symptoms of re-action returned after a longer or shorter interval of remission, and sometimes they became so violent as to require a repetition of the bleeding. In these instances, it was necessary to be more cautious in the use of the lancet, and the benefit resulting from it was comparatively small. Bleeding could not be safely em-

ployed later than the third day of the disease, and its good effects were seldom very apparent after the second. Although the efficacy of this remedy consisted principally in its moderating the violence of re-action; yet it extended beyond this, and was manifested in the greater susceptibility of the system to the action of other remedies. The operation of cathartics, in particular, was facilitated and rendered more effectual by an early and free use of the lancet.

Next to blood-letting, in controlling the immoderate efforts of the system, was an evacuation of the contents of the intestinal canal. These consisted of vitiated bilious and intestinal secretions, which were poured forth in great abundance, and when suffered to accumulate, always increased the ardour of the febrile flame. The purgative which I found to remove these irritating matters most effectually, and at the same time with the least uneasiness to the patient, was calomel. This was peculiarly adapted to the irritable state of the stomach, which, in almost every case, especially during the period of re-action, prevailed to such an extent as to render every other purgative inadmissible. I never gave less than a scruple of calomel for a dose, and frequently more; which was almost always retained even by the most irritable stomach, and in the course of five or six hours produced free evacuations. The first discharges were always black, and sometimes so acrid as to cause excoriation. By removing from a most sensitive part of the system so powerful a cause of irritation, the vomiting received a further check, and the cardialgia and oppression in the epigastrium were further mitigated, after venesection had been carried to a sufficient extent; for, although a sanguineous depletion may have reduced the general excitement within proper limits, and afforded great relief from the gastric disturbance; yet a considerable degree of the latter remained, which could only be further relieved by free evacuations from the bowels. Thus the efficacy of calomel as an adjuvant to the lancet, where the latter had been employed with the greatest benefit, was very conspicuous; but it was still more so in those cases where a free abstraction of blood was inadmissible, or where bleeding was prohibited altogether. Here calomel, by causing a free depletion from the intestinal canal, was the most effectual agent that could be employed, to restrain re-action with-

in due bounds. Its effects in these cases were similar to those of blood-letting, where it was beneficially employed, though a longer time was required for them to become manifest. While the bowels were freeing themselves from their irritating contents, the temperature of the body approached the healthy standard; the gastric derangement abated; the pulse became fuller, more free, and less frequent; the head-ach, as well as the general distress, was relieved; and finally, a great change was manifested in all the functions of the system. But as there was a copious flow of vitiated secretions into the intestinal tube in all cases, and at every period of the disease, particularly during the stage of re-action, a frequent repetition of the calomel became necessary. In some instances, two or three scruple doses were given in a day; but, in general, one such dose during the period of excitement, especially if the patient had been freely bled, was sufficient. The frequency of repetition, however, as well as the quantity of the dose, was determined by the appearance of the stools, and the relief they afforded. But as the change in the colour of the stools never took place while the calomel acted merely as a purgative, but occurred only after the period for employing it with the view of fulfilling the second indication had passed by; I shall defer speaking of its effects as an alterative, till I come to the third indication, and, in the mean time, shall notice the other means which were employed for reducing inordinate excitement. These were *cold aspersion* and *blisters*. Whenever the skin became hot and dry, and continued so for a little time, I directed the patient to be universally sponged with cold water, or cold vinegar and water; and this was repeated every hour or two, while the heat of the body continued above the healthy standard. In one case I was induced, by the violence of re-action, to have recourse to affusion, with the view of making a sudden impression on the disease; and accordingly the patient was stripped naked, and one or two buckets full of cold water, (that is, water whose temperature had not been raised by artificial heat,) were dashed over him, and he was then wrapped in a sheet taken out of a tub of water; after which he was wiped dry and put to bed. The effects were quite different from those I had anticipated, and such as to prevent me afterwards from employing cold water externally in any other way than by sponging. This was always

refreshing, and, when often repeated, generally kept the temperature from rising far above its natural grade. Thus excitement was lessened, and consequently cold aspersion exerted considerable agency in calming that agitation of the system, which re-action always produced, when it exceeded certain salutary bounds.

Blisters and sinapisms are to be considered among the means for answering the second indication, although they were not employed with this particular view. The purpose for which they were principally used, was to allay the gastric irritation and the painful sense of oppression in the epigastric region. But in answering this purpose, their beneficial influence was indirectly felt throughout the whole system; for, as the general excitement depended in some degree upon the irritable state of the gastric organs, an abatement of this local irritation was followed by a corresponding reduction of the general excitement. After the patient had been once freely bled, and a suitable dose of calomel given, I had a large blister or sinapism applied over the epigastrium, which rarely failed to afford at least a temporary relief from the symptoms, both local and general, depending on derangement of the stomach; for some disorder of this viscus still remained in almost every case, whatever may have been the good effects of venesection and calomel. The utility of epispastics chiefly consisted in diverting the force of the disease from those internal organs, where it seemed to be principally concentrated, and in preventing that disorganization, to which, as appeared from dissection, the fatality of the disease was chiefly to be attributed. Scarcely a case occurred in which more or less benefit was not derived from the irritation of a blister during the period of re-action; for, to whatever extent depletion may have been carried, and whatever effect it may have had in subduing excitement, the cardialgia and vomiting still continued troublesome, and could only be further mitigated by the means now under consideration. When the excitement ran high, the application of a blister was deferred till the lancet had been once freely used; or if it had been applied during the first stage of the disease, for the purpose of exciting re-action, it was removed as soon as that effect was produced, and not re-applied till the more efficient means had been duly employed. But where the efforts of re-action did not soon become so violent as to require bleeding,

a large vesicatory was applied without delay over the epigastrium; and its effects here were equally salutary as in those cases where it had been preceded by venesection.

By the several means which have been enumerated, the second indication was generally fulfilled; that is, re-action was reduced within its proper limits, and a remission produced, to prolong which was the object of the third indication. Of the means that were employed with this view, I come now to speak.

Third. The remedy on which I chiefly relied for prolonging the period of remission, and preventing a return of re-action, was one which was also employed with great benefit in answering the second indication, namely, calomel. But here its efficacy consisted principally in its alterative effects, while its utility in reducing excessive excitement, resulted in a great measure from its purgative operation; and however beneficial it may have been as an evacuant, at an early stage of the disease, it was still more so at the period of which I am speaking, as an alterant. Whatever relief it might afford, in conjunction with other means, by evacuating the bowels, so long as the discharges retained their morbid appearance, I could not be certain of having gained any permanent advantage over the disease: indeed this was an evidence that the disease still maintained its seat in the internal organs, and that, although it might seem for a time to be subdued, yet there was danger of its soon reviving and raging with increased violence. But no sooner did the alvine discharges assume a more healthy colour in consequence of a due exhibition of mercury, than the force of the disease appeared to be completely broken; and though there might be a renewal of the febrile conflict, this was generally slight, and of short duration.

To subject the system to the mercurial influence, and produce this important change in the hepatic and intestinal secretions, calomel was given in doses of from three to ten grains, and repeated every two, three, or four hours, until its effects on the mouth became manifest. When there was considerable gastric irritation, the calomel was administered alone in the form of pill; but when the state of the stomach would admit, it was combined with opium and antimonial powder, in the proportion of five grains of calomel, half a grain of opium, and two or three grains of the pulvis antimonialis. At the same time from a drachm to half

an ounce of the strong mercurial ointment, was daily used by frictions, and in dressings to blistered surfaces. Before commencing this course, the bowels were thoroughly evacuated by one or more scruple doses of calomel, and by injections, if necessary; and then by pursuing it as strictly as circumstances would permit, the mercurial action became manifest on the mouth in two or three days; and at the same time a favourable change took place in most of the disordered functions. The affection of the stomach subsided by degrees; the tongue parted with its yellowish or brown coat, and became moist; cutaneous secretion was restored; the excretions resumed their natural colour; and the patient felt himself gradually released from the influence which the disease had hitherto exerted, in a greater or less degree, over all his senses. These salutary effects being once produced, the danger was generally past; for there was scarcely an instance of a fatal termination, except in consequence of relapse from imprudent exposure, after it became evident that mercury had brought the system under its influence; and on the contrary, few cases terminated favourably, where the system remained insensible to the action of mercury. At the same time that this course was pursuing, it was necessary to keep up free evacuations from the bowels, for which the calomel, administered in the manner above stated, was generally sufficient; but if not, the dose was occasionally augmented to answer this purpose, or, when circumstances would admit of it, injections of sea-water, solutions of sulph. mag. &c. or any mild laxative, as ol. ricini, infus. sennæ, sulph. mag. &c. were employed with equal benefit.

External stimulation was also a useful auxiliary in fulfilling the present indication; and accordingly, blisters and sinapisms were occasionally renewed, and stimulating dressings applied to the excoriated surfaces. The dressing which I generally employed, was a mixture of the ung. canth. and ung. hyd. fort. As soon as the mercurial action became apparent in the mouth, the dose of calomel was diminished, and the interval between the doses increased; but, at the same time, it was given in sufficient quantity to keep the system under its influence, and continued till convalescence had made considerable progress. After ptyalism appeared, from ten to thirty grains of calomel, combined with opium and antimonial powder in the manner already mentioned, admin-

istered daily, were generally sufficient to answer the desired purpose. The earlier ptyalism took place, the more complete was the victory obtained over the disease; and as it was more free the sooner it was produced, a copious flow of saliva was always a favourable indication. The salutary effects of mercury as an alterative were commonly manifested within three days from the commencement of its exhibition: if a longer period elapsed, they seldom took place at all, and the disease terminated fatally.

Thus, by subjecting the system as soon as possible to the mercurial influence, and at the same time keeping up free evacuations from the bowels, and maintaining a considerable degree of external irritation, the remission was prolonged, and a repetition of the febrile orgasm sometimes, though not often, wholly prevented; and when it did recur, it was almost always so far mitigated as to be devoid of danger. We come now to consider the means for answering the remaining indication.

Fourth. It has been observed that the tendency of the disease to death or recovery became manifest from the commencement of the fourth period or stage of its progress, if not before. Hence the remedies adapted to this period, and for answering the present indication, were designed to obviate the particular symptoms which were the usual precursors of death, or to assist in completing the victory which nature seemed to be now gaining over her destructive enemy. The symptoms just alluded to, as denoting a fatal termination, have been already described. It is therefore unnecessary to enumerate them here, or the means that were unsuccessfully employed to counteract them.

For the *hickup*, the only treatment, from which I derived any evident benefit, consisted in administering ten grains of bicarbonate of soda, combined with about a grain of opium, every four or five hours, and in applying between the shoulders a large plaster, composed of pitch, opium, and camphor. In two or three instances, I had reason to believe that this troublesome symptom yielded to these means. The *black vomiting* was arrested in two instances, and the patients recovered. In one it was quickly stopped by charcoal alone; in the other, it was first checked by a dose of calomel, consisting of eighty grains, and afterwards permanently restrained by charcoal, combined with oil of turpentine. The symptoms attending the latter case were extremely

severe, and required the employment of vigorous measures. The matter thrown up had the black flaky appearance, and its ejection was accompanied with the most distressing efforts, and an insupportable sense of heat, extending through the whole alimentary tube from the stomach to the anus. After continuing several hours, it was checked in the manner I have mentioned, and the other distressing symptoms were considerably alleviated; but in a few hours they all returned, and with as great violence as before. Recourse was now had to the charcoal and oil of turpentine, equal parts of which were mixed together, and two drachms of the mixture given every four or five hours. After a few doses had been taken, the vomiting ceased, and the burning in the stomach was a good deal abated, but it still continued severe in the intestines. It was finally relieved by injections of lime-water, balsam of copaiba, and mucilage. This remedy was found useful in other cases, where the mucous tissue of the intestines was in an irritable or inflamed state. For the *hemorrhage*, which I have ranked among the most fatal symptoms of the disease, nothing was, and I believe nothing could be, employed with any effect; though every thing was tried which promised any success. At the same time that the remedies which have just been enumerated were employed, it was necessary to keep the bowels open; and for this purpose cathartics were frequently required. Costiveness never failed to aggravate the disease; and however depressed and apparently debilitated the system might be, if milder means were ineffectual, strong cathartics were given with advantage. When the near approach of dissolution has been threatened, not indeed by black vomit, hickup, or hemorrhage, but by the livid hue of the skin, coldness of the extremities, absence of pulse, short and laborious respiration, &c., I have known a cathartic consisting of a scruple of calomel and half a drachm of jalap, to remove all these alarming symptoms in the course of a few hours, and the patient to recover.

In fulfilling the remaining part of this indication, namely, to promote convalescence, when symptoms appeared which denoted a favourable termination, it was always necessary to continue the use, to a greater or less extent, of the means which had been employed for answering the three former indications. Notwithstanding the force of the disease might be broken, and there

might be reason to anticipate a fortunate issue; yet it was generally necessary, at the commencement of the period which I have now in view, to resume the means for moderating re-action. Venesection, however, was very rarely admissible at this late stage of the disease; but cold aspersion, cathartics, blisters, &c., were employed with greater or less diligence according to the urgency of the symptoms. The alterative use of mercury was continued as long as a single vestige of the disease remained. By persevering in the use of these means, the disease was at length subdued, and convalescence became fairly established. Recovery here was a slow and tedious process, and owing to the delicate state of the stomach, I was greatly restricted in the use of means for accelerating it. Porter was the tonic which agreed best with the stomach, and indeed the only article of this class of remedies that could be used at all, till convalescence was pretty far advanced; when some of the light bitter infusions answered very well instead of porter. All the vinous and spirituous preparations were inadmissible at every period of recovery. Whatever tonic was given, it was administered in very small doses, and at intervals of five or six hours.

It may be proper to say a few words here respecting regimen. In the severe forms of the disease, and in all cases where there was considerable gastric derangement, food was wholly prohibited till convalescence was established, and then only a very minute quantity of the mildest farinaceous articles was allowed to be taken at once. Great caution was necessary in meting out the patient's diet; for, as the appetite was often too great for the digestive powers, there was always great danger of this overeating, which never failed to bring on a relapse and disappoint the most flattering hopes of recovery. Tapioca and arrow-root were the best articles of diet during the early part of convalescence; and these were allowed only at intervals of three or four hours. As the stomach regained its tone and energy, these articles were exchanged for chicken-broth; this was succeeded by the lightest kind of solid food, and thus by degrees the patient returned to his former coarse and substantial fare.

Respecting drinks, it is only necessary to observe, that during the whole progress of the disease, none were taken but such as were mild and unirritating. The principal drinks were toast-

water, barley or rice-water, solutions of gum arabic, and a weak infusion of balm. Lemonade was grateful to the palate, but disagreed, as well as every other acidulated drink, with the stomach. Under this head may be mentioned effervescing draughts, or soda-water, which, though very agreeable to the taste, generally proved offensive to the stomach.

Having now concluded my account of the yellow fever, perhaps it may not be improper to say a few words respecting its sequelæ, or those diseases which became most prevalent when it ceased to rage. These were

Intermittent Fever and Jaundice.—As the season advanced and the weather became cooler, the yellow fever gradually lost its malignity, and assumed a milder and more manageable character. At the same time, the type of the fever underwent a corresponding change, by the remissions becoming gradually more perfect, until at length they amounted to a complete apyrexia or intermission. But though the disease had changed its character, it still manifested a great degree of obstinacy, owing to the irritable state of the gastric organs, and to hepatic derangements. Not only those who had suffered an attack of the yellow fever, but others, who, by their late arrival on the island, had escaped that direful malady, were subject to the intermittent. Its attacks were most frequent immediately subsequent to a change of the wind from a southerly to a northerly direction; which, as has been before mentioned, was always attended with a considerable reduction of temperature. Respecting the symptoms of the disease, I shall only remark, that those depending on the irritable state of the stomach and liver, were particularly conspicuous, and required a mode of treatment which is not common in intermittent fever. The type of the disease was generally that of the single or double tertian.

The plan of treatment which I found to be most effectual, consisted in the administration of mercury as an alterative, in combination with opium and antimonial powder, in the manner which has been already mentioned, till a slight ptyalism was induced; when the paroxysms often ceased, and the patient recovered without further treatment. But if the disease still continued, I gave the sulphate of quinia in the form of pill, a grain every hour or two during the apyrexia, by which means a stop

was put to the paroxysms, at least for a time. This medicine seemed better adapted to the irritable state of the stomach, and to be more effectual, than any of the other remedies which have been extolled for curing intermittents; though in some cases, where the stomach was free from uneasiness, the bark in substance was given with success. It was administered in combination with carbonate of potassa and powdered columba-root, as follows: R. pulv. cinchon. ℥i. carb. potass. ʒi. pulv. rad. colomb. ʒiss. cujus sumetur drachma una quaq. hora 2da, quamdiu continuetur intermissio. Blisters and sinapisms were frequently employed as auxiliaries to the means which have been mentioned.

By pursuing this course of treatment, with such variations as circumstances required, the disease was generally subdued for a time; but it was liable to return from the slightest causes, and it was only by a change of climate that a radical cure could be effected.

The *jaundice* occurred much less frequently as a sequel of the yellow fever, than the disease of which I have been speaking. It was often accompanied with an evident enlargement of the liver, and perhaps may, therefore, be considered as a symptom of structural derangement of that organ, rather than as an original disease.

The mode of treatment which proved most effectual, consisted in the alterative use of mercury, in the manner that has been mentioned, and the repeated application of blisters over the right hypochondrium; and in the use of porter and the light bitter infusions, after the mercurial treatment had effected a change in the secretions.

But this disease, like the intermittent, though it generally yielded for a time to the remedies that were employed, always manifested a strong disposition to return, as the patient was continually exposed to the causes which produced it; and a permanent cure was only to be obtained by a long residence in a healthy climate.

ARTICLE II.—*Hints on Vaccination.* By D. FRANCIS CONDIE, M. D.

DAILY complaints are made by physicians, in different parts of our country, of the difficulties they experience in preserving, throughout the year, a supply of genuine vaccine matter, and also of their frequent failures, in attempts to communicate the infection, in a satisfactory manner, to their patients. Being fully persuaded, that both these circumstances may be avoided, by the observation of a few simple rules, I have taken the liberty of offering to the profession, for the use, more particularly, of its younger members, some hints in relation to the points referred to—the result of considerable experience and many comparative experiments. Even should the directions I propose laying down, be found inconsistent with the experience of some, it is trusted, that this little essay may do some good, by calling forth the remarks of others, on questions of importance, as well to the medical profession, as to the community at large:—For upon the purity of the vaccine matter we employ, and our facility in placing under its influence the system, will very much depend the certainty of our patients' security, against the effects of the most loathsome and destructive of maladies, "the scourge of infancy and terror of beauty."

I. *Of the Scab.* The experience of the great body of American practitioners has confirmed them, in giving to the dry crust, or scab, which forms upon the arm after vaccination, a preference over the recent lymph, as a means of propagating the disease. This scab, while equally efficacious with the latter, is much more manageable, and more readily preserved; while, at the same time, its use obviates the necessity of interfering with the regular progress of the vaccine vesicle,—a circumstance of very considerable importance in reference to the certainty of the child's infection.

In regard to the appearances of the scab, when we are certain that it is the product of the genuine disease, nothing of course need be said; but as this cannot always be the case, and as I have observed, that crusts furnished, even by children who had the disease most effectually, have, in consequence of some change which they have undergone whilst upon the arm, failed in producing genuine vaccination, some remarks in relation to the gene-

ral characters presented by those scabs most to be depended on, though of themselves far from being absolutely conclusive, will nevertheless aid very considerably the physician in his selection.

The scab I have found the most seldom to fail, and which has also appeared the longest to resist any change in its properties, is of a very dark mahogany or walnut colour,—hard and perfectly opaque;—it is somewhat thick at its centre, or approaches to a conic form, and is nearly level on its under side or base;—when cut into thin slices it presents a dirty white, or somewhat brownish, appearance;—it is rather tough, or, in other words, is more readily dissolved in water than reduced to a powder. I have frequently had presented to me, as genuine vaccine scabs, those of a light brown, or an amber colour, thin, semi-transparent, easily fractured, and as it were, concave, or excavated, at their lower surface. Now, although I am not prepared to say, that a crust, presenting the last mentioned characters, is never genuine, yet so frequently will such a one be found to fail in communicating the disease, that I would advise it invariably to be rejected.

A scab also, formed from a vesicle, the regular progress of which has been interfered with, by the irritation of the clothing, accidental violence, or other cause, should never be made use of for vaccinating, as the disease communicated by it will seldom be found genuine. Neither should any scab be preserved for use, that has been taken from a child affected at the time with any disease of the skin. Some, as Willan, believe the virus furnished by children under such circumstances will communicate a spurious disease, not preservative from the small pox; whilst others conceive, that the cutaneous affection may be propagated with the vaccination. The truth of either of these opinions I can neither affirm nor deny, but certainly, until points of so much importance are fully determined, the caution referred to should on no account be lost sight of.

II. *Preservation of the Scab.* This is with many a subject of great, and, in some degree, unnecessary anxiety,—the virus in this form being much more easily, and for a longer period of time, preserved pure than is generally imagined. The great object in the preservation of the scab should be, to keep it perfectly dry, particularly to secure it from the influence of any undue degree of moisture in the atmosphere. This I conceive to be of greater

importance than the mere exclusion of the atmospheric air,—though, at the same time, the latter should not be neglected.

The best means, probably, for securing the scab from undergoing any change, is to have a circular piece of ivory, on the upper surface of which, a number of small excavations have been formed, each accurately adapted for containing a single scab,—the whole to be covered with a common lid, which fits on in the manner of a screw. But even this precaution is not absolutely necessary. I have been in the habit, for many years, of simply wrapping each crust, carefully, in a portion of clean writing paper; and in this manner, deposited in a close box turned out of solid wood, or in my pocket book or lancet case, I have kept vaccine matter, without experiencing in it the least deterioration, for upwards of a twelvemonth. The fact is, I have never known myself to be without genuine matter,—on the contrary, besides what was necessary for my own use, in the above simple manner, I have been enabled to keep a sufficiency for the supply of my friends, at all seasons of the year.

When the scab is carried about the physician's person, great care should be observed to guard it from the influence of the heat and perspiration of the body.

It has been lately proposed by some, to reduce the vaccine scab to a fine powder, and in this state to preserve it in a small ivory tube; but matter kept in this manner will, I am convinced, much more frequently fail in communicating the disease, than when the scab is retained entire. Whether the process of powdering it have any effect upon its composition, or whether, simply, in a state of minute division it is more liable to a spontaneous decomposition, I pretend not to determine;—the fact, however, of its diminished efficiency I have tested by experiment.

III. *Of the insertion of the Virus into the System.* Previous to its insertion, it is necessary that a small portion of the dry scab be reduced, by means of pure *cool* water, into a paste, of about the consistency of cream;—for this purpose, the bottom of a china plate or saucer, and a penknife or lancet, constitute every thing that is necessary. It is, however, very customary, and perhaps convenient, for the physician to carry with him a small square of common window glass, upon which to form the paste,—but when this is done, two cautions are absolutely necessary, viz. that after

each time the glass is used, it be made perfectly clean and dry, before it is put by; and secondly, that on no account whatever, the dissolved matter remaining from one vaccination be preserved for another. Virus thus kept, will be a constant source of disappointment to the physician, and of danger to the patient.

After the matter has been dissolved, the common practice is, to dip into it the point of a lancet, which latter is then introduced obliquely, for a short distance, beneath the skin. From my experience with this method of vaccinating, I have found, that, however pure and fresh the matter employed, the disease, in a majority of instances, was not communicated by it on the first attempt, and frequently not until after several trials. The failures have appeared to me to arise from one of two causes; either, that, in passing the lancet under the skin, the matter is entirely wiped off from its point, and not a particle is introduced, or that, by the puncture, so much blood is caused to flow, that the matter is washed out, even after it has been deposited beneath the cuticle. No one of the methods proposed to obviate these causes of failure have been found very generally successful. I believe that every candid physician, who has followed the above plan of vaccinating, will acknowledge his very frequent want of success; and it is this circumstance, no doubt, that has given rise to the invention of numerous instruments, for inserting the matter into the system, by the aid of which, it is proposed to render the communication of the vaccine disease, at once, more easy and certain. Such of these instruments, however, as have come under my inspection, I should consider to be mere encumbrances to the physician's pocket case.

It would be useless to enter into an examination of all the plans which have been proposed for vaccinating,—many of them being unnecessarily tedious, and others productive of no inconsiderable pain, while all of them are, in every point of view, inferior to the method now to be described. This method consists in making, on the part at which the matter is to be inserted, several straight incisions, with the blade of a common spring lancet, taking care, however, that each incision shall penetrate no deeper than is necessary merely to divide the cuticle; and then crossing these, at right angles, by others of a similar depth. This operation, when properly performed, will be found to have oc-

casioned a slight blush of red upon the part, and most commonly, a number of extremely minute specks of blood; the less blood, however, that is thus occasioned to flow the better. A portion of the dissolved crust, being now taken upon the point of the forefinger, is to be rubbed gently over the incisions, and the remainder may be then spread upon the part and allowed to dry. This mode of vaccinating I have been in the habit of following for several years, and am convinced, that, when it is performed with the least degree of care, it will seldom, if ever, fail of at once communicating the disease. To render it still more effectual, it has been proposed to smear the arm with the matter previously to dividing the cuticle: either method may be pursued. One recommendation in favour of the foregoing plan, independent of its certainty, is its being productive of so little pain, that it may be performed while the infant is asleep without awaking it, or even when it is awake, almost without its knowledge,—a circumstance, however trivial it may appear, by no means beneath the notice of the practitioner.

Subsequent to vaccination, the arm should be guarded from irritation by the fingers of the patient, its clothing, or accidental violence. To effect this, the best means is to enclose the whole arm in a wide sleeve of linen or fine muslin, drawn at the shoulder and wrist. This is a caution of some importance, as well to obtain a genuine scab, as from the fact that the very security of the child against the small pox may be jeoparded by its neglect.

IV. *Subsequent Attendance.*—To decide upon the certainty of the child's infection, after whatever manner it may have been vaccinated, it is absolutely necessary that the physician should watch attentively the progress of the arm, from the insertion of the virus until the formation of the scab; the appearances presented on the third, sixth, ninth, and twelfth, or the fourth, eighth, and twelfth days, being particularly noted. No one, indeed, should be pronounced vaccinated, and secure, in consequence, from the effects of small-pox, unless the physician is absolutely certain, from his own observation, that the progress of the arm, the form and appearance of the vesicle produced, and its regular and successive gradations, correspond with those which mark the genuine vaccine disease,—a correct description of which being contained in every systematic work, need not be repeated here.

V. *General Remarks.*—With respect to the age and other circumstances proper for the performance of vaccination, the remarks of CAPURON appear to be so extremely judicious, that I shall take the liberty of quoting them here, with but little or no alteration.

The vaccine disease is of so mild a nature, that we may dispense with every preparation of the system previously to its communication, and with every species of medical treatment during its course or subsequently. Neither the season of the year, the age, temperament, or sex of the little patient, not even the diseases with which it may accidently be affected, have been found to produce any change in the character of the vaccine infection. In general, however, vaccination is postponed until the patient is from six weeks to two months old. Some, however, have imagined that the disease is more regular, and accompanied with less febrile irritation, in children from two to six months old, and hence they recommend this period as better adapted for vaccination than any other; but experience has fully proved, that the operation is as successful, and the disease produced equally mild, in the new born infant or in those but a few days old. In all cases, where it can be done conveniently, it is proper to wait until the rigours of winter have been moderated by the influence of spring, or until the heats of summer have given way to the coolness of autumn: in a word, whenever there is no urgent necessity for the immediate performance of vaccination, we endeavour, previously, to remove from the child every circumstance capable of influencing its health. But, should the prevalence of epidemic small-pox endanger the life of the infant, or a necessity present itself for its immediate removal, to a situation where pure vaccine matter can with difficulty be procured; in such cases, it would be the height of imprudence to delay, for a moment, on any slight pretext, the employment of a preservative, the certainty and innocent nature of which are now placed beyond the possibility of doubt.

It has been remarked that vaccination adds nothing to the danger, nor in any degree interferes with the process of dentition; and practitioners of eminence, of whom we may cite VALENTIN and HUSSON, assure us, that the communication of the vaccine disease has had the effect of completely removing crusta lactea, herpes, tenia capitis, convulsions, ophthalmia, and even scrofula.

Hence, we find, there are few circumstances which will warrant us in hesitating, for a moment, to place in security, by vaccination, every infant in the least danger of being exposed to the influence of the small-pox contagion.

ARTICLE III.—*On the Effects of the Vapour Bath.* By D. THEODORE COXE, M. D.

VAPOUR bathing, it is well known, has been employed, in some shape or other, almost from time immemorial. We have good reason to believe, that HIPPOCRATES, GALEN, and others of the olden time, were not unacquainted with its effects; and we find it used, either as a luxury, or remedy, in civilized and in savage life, in polar regions and beneath a tropical sun. In Russia and the adjacent countries, it is so commonly employed, that to be excluded from its use, is regarded as a punishment of some severity. The aborigines of our country place great reliance on its powers in fevers, &c.; and for evidence of its being a luxury, if personal experience be wanting, we need only appeal to the turbaned followers of Mahomet. It is not my object, however, in the present paper, to enter into its history, or even detail the improvements made in its mode of administration. For these and other points, we must refer to the various works upon vapour bathing, and particularly to those of RAPOU and GIBNEY, and to a review of the latter, in the April number of the Medical Recorder for 1826. The principal object of this paper being to give an account of some cases which were treated by the vapour bath in this city, and which fell under my immediate observation, I enter at once upon the task, intending to offer, as I proceed, such remarks and reflections as may seem to arise out of the nature of the subject.

Upon the establishment of the vapour bath in this city some time since, a brief record of most of the principal cases was kept by the physicians connected with the institution, with a view to a subsequent report; but this having been mislaid, nothing but a very general statement has as yet been made public. Having been so fortunate lately as to recover a small portion of these cases, and

thinking, imperfect as they are, they might not be wholly destitute of interest to some of the readers of this journal, I have concluded to present them at this time to their notice.

I would merely premise for the information of those who may not have seen the apparatus employed, that the vapour, generated in a boiler, escaped through a bent tube, furnished with a stop cock, into a small basin or receiver in the lower part of a box. The top of this receiver, into which herbs, or other articles were placed, as well as the upper covering of the box, was perforated, and allowed the free ascent of the medicated vapour into the upper or curtained portion of the contrivance, where the bather sat, and either inhaled the vapour, or had it merely applied to the surface of the skin, according to the situation of his head, whether within or exterior to the enclosure.

Among the first cases that presented for trial, was that of a Mr. S——, from Kentucky, who had been under the care of several physicians for many years, had travelled much in search of health, and undergone a variety of treatment. His complaint was a chronic hepatic derangement, with great torpor of the bowels. The skin was constantly dry and harsh, as well as very sallow, and digestion was much impaired. He had been thus affected for six years, occasionally relieved by the prescriptions of some of his physicians, but never permanently better. He began the use of the bath on the twenty-first of October, and took it sometimes daily, sometimes every second day, until the beginning of December, when he left the city to all appearance perfectly well. He took the bath at a pretty high temperature, inhaling the vapour, and sweating very profusely. He also used frictions with a flesh brush over the region of the liver. In consequence of these measures, his skin became soft, his complexion clear, and his digestion good; the torpor of the bowels was removed, and notwithstanding the depletory operation of the bath, he had actually gained flesh. Perhaps in no case were the benefits from the bath so signal and striking as in the present one, though in most of the cases where the skin was much affected, it showed decided powers.

About the same time, a Mr. H—— of this city, resolved to try the efficacy of the bath. He had been long subject to rheumatism, and was in the frequent habit of taking the Lisbon diet drink. For three weeks he had suffered severely from an attack, having

been obliged to take laudanum every night to procure sleep. From the pain and stiffness in his shoulders, he was unable to shave, or put on his coat or cravat, without assistance. His muscles generally, but particularly those of his arm and back, were contracted, the former being bent at the elbow. The first bath he took, inhaling the vapour and sweating freely for upwards of half an hour, afforded such relief, that he tied on his cravat himself, and slept that night without laudanum. A second bath was followed by similar results, and the disease seemed to be so nearly removed, that he omitted coming again for some time. A slight return of his complaint, however, brought him again to the bath, after which he declared himself free from pain, and with but a slight stiffness of the shoulder and elbow remaining. Not very long after, we were surprised to hear that this gentleman was confined to his bed, much emaciated, suffering under an increase of pain and stiffness, and that all this was attributed to the bath. How this supposition could be well founded, after at first deriving so much benefit from it, and without some particular and imprudent exposure, we were at a loss to conceive; and the more especially as some of us were in the habit of frequently taking the bath at different temperatures, and sallying immediately forth upon our usual business, sometimes indeed before we were completely dry, in all weathers, cold, warm, wet and dry, without subsequently experiencing any ill effects. It is possible, however, that the altered condition of a rheumatic system, where more or less fever attends, may induce a liability to take cold after bathing, which we did not experience.

With regard to exposure, and liability to take cold after using the bath, a few words in this place may not be improper; and we here wish to be considered as speaking of persons in health, for disease may, and doubtless does, greatly modify the human constitution and its susceptibilities. The Russian, who delights in a vapour bath of high temperature, goes reeking from it to roll in the snow, or plunge into cold water. This he does not only with impunity but advantage; and though this may be owing now to habit, that "second nature," there must have been a beginning, when this could not be brought into the account. Strangers too, unaccustomed to the manners and customs of the country, have borne it well. Beaupre, in his treatise on cold, says, he

frequently had buckets of cold water thrown upon him while in, or immediately upon issuing from, the bath; that the first time it created but a lively coolness; but that the second time, after a bath of higher temperature, his feelings were decidedly agreeable. The stronger the heat, the less sensible is the cold impression. When the skin is highly excited and reddened by a bath of from 120° to 160°, cold has scarcely any effect; but in the ordinary state of the cutaneous function, a sudden change of 20° or 30° in the temperature is sensibly felt. BLAGDEN, who entered ovens heated to 250°, says, "we passed out after every experiment, immediately into the cold air, without any precaution; after exposing our naked bodies to the heat, and sweating most violently, we instantly went into a cold room, and staid there even some minutes before we began to dress, yet no one received the least injury." The experience of Dr. DOBSON at Liverpool, is to the same effect, as also that of Dr. CLENDINNING and many others. Captain PARRY, in his account of some of his polar expeditions, mentions that his crew suffered comparatively little from the cold, after the adoption of the plan of thoroughly heating all parts of the vessel, and that they were in the constant habit of passing from a temperature of 50° or 60° F. to one of 15° or 20° below zero. They also could work better and longer in the cold, in proportion to the accumulation of caloric which they acquired on board the vessel.

But to return from this digression—other cases of rheumatism were treated by the bath with complete and permanent success. These differed essentially from each other in the degree of violence, length of duration, and the system and habits of the individual, and yet the favourable effect on all was the same. A valet of a foreign minister, who had been afflicted with rheumatism of the upper extremities for a long time, had undergone a variety of treatment, and who at this time found great difficulty in moving his left arm, applied to us on the first of November. The first bath afforded him great relief, and the second cured him completely.

A gentleman from Woodbury, New Jersey, of a robust constitution, was attacked, in July 1825, during the very hot weather, with a violent pain in his heel, which subsequently extended up the leg to the hip, causing eventually great stiffness and difficulty in

walking. He had used various remedial measures with but little benefit, and resolved to take advantage of his visit to the city, to make trial of the vapour bath. He took five baths in as many days, and was then obliged to leave town; and though not quite cured, his improvement was manifest. He could walk without difficulty, and very little stiffness or pain remained.

In a severe case of lumbago, the patient being unable to dress himself, one bath, at a high temperature, aided by the flesh brush over the loins, effected a complete cure.

A few cases of a different character will now be related. Mr. H. aged 22, had an ulcerated tonsil on the right side, another ulcer on the back of the fauces, and a third on the *velum pendulum palati*. There was also considerable tumefaction, so as to render deglutition very difficult, and the glands on the exterior were tumefied and painful. On the 25th of October, leeches were applied, and the use of the bath was commenced the next day. By evening the swelling was diminished, and deglutition easier. The bath was repeated on the 27th, with continued amendment. On the 29th, the ulcer on the velum pendulum palati, and that on the posterior fauces, were well; the tonsil nearly healed; the external tumours removed; and an eruption of pimples on the face, which had existed for some time, fast disappearing. In a few days, probably from some imprudence, the external swelling again increased, but another bath, followed by a blister, soon removed it. The effects of the bath in removing pimples, and otherwise improving the complexion, in many who were taking it with other views, were so striking, that several females were induced to use it solely for that purpose, and were generally benefited.

About the same time, Mr. C., student of medicine, aged 22, was induced to make trial of the bath. He had an enlarged spleen, with a tumid, soft abdomen, denoting the commencement of effusion. His complexion was sallow and leucophlegmatic, his tongue furred, his bowels irregular, and skin dry. The first bath caused him to sweat freely, and he slept better than usual the succeeding night. The next morning his urine was thick, and he was free from an unpleasant taste in the mouth, which had been a constant attendant on his complaint. He repeated the bath from time to time, with such advantage, that his skin became

gradually clear and moist, his bowels regular, his abdomen reduced, and his general feelings much improved. In short, the bath, aided by the flesh brush, and attention to his bowels, entirely cured him in the course of a few weeks.

A Mr. V. had for a considerable time suffered from a cutaneous eruption, accompanied with a torpid condition of the liver, attended with white and hard fœcal evacuations, for which he had been under treatment for several months. The remedies which he had employed, consisted principally of mercurial preparations, with dietetic regimen. He commenced the bath at about 104°, and sweated profusely, each time augmenting the temperature, until it reached to between 115° and 120°. His liver was much benefited; his stools became more natural; the eruption much faded, and his general health decidedly improved. He was in the habit of taking several tumblers of cold water while in the bath; and neither in his case, nor in any other in which this usage was followed, did any bad consequences result. The whole system was highly excited, more heated perhaps than in the height of summer; and yet no prostration, no pain, no inconvenience of any kind, was the result. Whether the perfect safety of drinking cold water under these circumstances can be attributed to its being unconnected with fatigue and intemperance, which are generally associated with those terrible cases of cold drinking in the summer season, we will not undertake to decide. It may be proper also to mention, that this gentleman's hair, which of late had fallen out considerably, became under the use of the bath strengthened and thickened. The same effect was observed in other cases.

In a case of scrofula, where we at first had hopes of effecting a cure, the result was eventually unfavourable.

We had several opportunities also of testing the efficacy of the bath in dyspepsia. The patients generally perspired with difficulty; but under the use of the bath freely, it removed the costiveness of the bowels, and considerably improved their complexion; but here the benefit terminated. Indeed, in one case, the inhalation of so much warm vapour seemed to excite too much phlogosis in the stomach, as the patient was worse after taking several baths, and attributed to them this effect. It is probable, that benefit might be derived from a partial bath. For instance,

a dyspeptic invalid might be enclosed as high only as the epigastrium, thereby avoiding the inhalation of the vapour; at the same time the abdomen might be freely rubbed with a flesh brush.

A robust Irishman was attacked with violent inflammation of the kidneys, and sympathetic spasms about the heart. Several bleedings, large doses of laudanum, external applications, and pediluvia succeeded in moderating the symptoms; but there remained a distressing dysuria, (the urine being voided by a few drops at a time, mixed with blood,) and a considerable flatulence and tumefaction of abdomen. Nothing made any impression on these symptoms, until he took the vapour bath at as high a temperature, and as long as his strength would permit. He afterwards urinated freely and without pain, his bowels became regular, and he was soon convalescent. A slight fever was developed after the bath.

A case of hemicrania of some standing was perfectly cured by six baths.

Many cases of influenza were cured by one bath; and what was interesting, showing the powerful derivative effects of this remedy, mercurial symptoms were developed in the mouths of some, who had previously taken calomel, which, by not operating freely upon the bowels, had accumulated in the system. A physician of Charleston informed us, that salivation was induced by the bath, in a patient who was at the time taking Swaim's Panacea, strengthening the supposition, that, sometimes at least, mercury, in some shape, is contained in that nostrum.

Erysipelas was one of the diseases which yielded readily and kindly to the influence of the vapour bath, and some cases of much interest presented themselves to our notice; but fearful that we have already entered too much into detail in this paper, we shall omit any particular mention of these, as well as of other cases, and hasten to draw our remarks to a close.

The cases we have mentioned were generally of those, who inhaled the vapour in addition to having the surface of the body exposed to its influence; and the peculiar odour of some of the articles, through which the steam passed, was not unfrequently perceived in the urine of the bathers after coming out of the bath. This was the case with myself, after placing a sponge filled with balsam copaiba in the receiver.

It was customary to enter the bath at a low temperature, and afterwards gradually to increase its heat. One physician, however, for the sake of experiment, allowed the temperature to rise as high as 120°, before he entered; and he describes his sensations as similar to those, which he had experienced when taking a cold bath.

In conclusion, it may safely be asserted, that the vapour bath, as a remedy, is possessed of uncommon powers, and that by not employing it more frequently, our physicians deprive themselves of a most valuable adjuvant. The preceding account, with the few interesting cases noticed, will, we hope, attract their attention to it, and we are satisfied they will never regret the time spent in investigating its merits.

ARTICLE. IV.—*Observations on Delirium Tremens, or the Disease improperly called Mania a Potu, and produced by the Cessation of the habitual use of Alcohol and other Narcotic Substances; with an Attempt to set the Treatment of that Affection upon a stable Basis.* By B. H. COATES, M. D. &c.

In offering to the medical public an essay on this affection, the writer is aware, that, to many, he must seem to be employed upon a work of supererogation. Notwithstanding, however, the repeated essays which have appeared on the subject, in the American periodicals, he is still convinced that he has useful matter to offer.

At an early period of his studies, having been placed in the Pennsylvania hospital, his attention was strongly drawn to this affection; partly from its frequent occurrence and the destruction by it of many lives, and partly from the circumstance that a very great share, and, in numerous instances, nearly the whole of the responsibility of the care of the cases was left in the hands of the resident physician and surgeon of the house. In addition to this, it became an object of remark or of unavoidable inference, that various incongruities, and, in some instances, serious evils arose from confounding this temporary delirium with mania of long continuance. From numerous observations and reflections, made

in consequence of these views, he was led to conclusions, which it will be the object of the following essay to develop.

One peculiarity in the succeeding sheets requires explanation. They claim to be founded primarily upon the observation of a large number of cases; and yet they present notices of but few. This mainly arises from the circumstance, that by far the greatest number of them were observed, while the author was subjected to the pressure of various and hurried avocations, pertaining to the station of house physician to the Pennsylvania hospital; and at a time when he did not contemplate writing on the subject. He has, however, he believes, preserved sufficient records to ascertain what is most necessary in describing the disease; and the omission is of the less consequence, both from the general tediousness of a long continued series of cases, and from the circumstance that a considerable number have been well described and preserved by the different writers who have published on this subject, so that reference can easily be had to them. He is obliged to several friends for valuable assistance; but this is, perhaps, the proper place to mention the particular kindness of Dr. NEILL; who, with the greatest liberality, placed in his hands the records of eleven cases, which were selected by that much respected physician, for the purpose of making a fair comparative trial of the relative utility of the emetic and stimulo-narcotic modes of treatment. They will be found appended to this memoir.

Name.—In giving the preference to the term *delirium tremens*, over that, more commonly used among us, of *mania a potu*, the writer may seem to many to be influenced by a desire of singularity. He believes, however, that it is easy to show decided grounds for this choice. In the first place, authority and priority are clearly in its favour. This name, first given by Dr. SUTTON, in his little essay on the disease, has continued, ever since, to be exclusively employed by the European writers, both British and continental; with the only exceptions of Drs. PEARSON, ALDERSON, and ARMSTRONG, who have employed the denomination, commonly used near Newcastle-upon-Tyne, of *brain-fever*. When we consider the extreme laxity and vagueness of this term, as well as the circumstance, in particular, that the same appellation is frequently given to phrenitis, a totally different disease, from which it is of the first importance to distinguish the affection

under consideration, but little probability appears that any one will decide in favour of its adoption. The priority then remains, according to the custom of men of science, to the next describer; and confers on him the right of naming the disease he has recorded. The name of delirium tremens, thus given by him, has grown into almost universal employment in the British islands, and, from them, has been adopted by the writers of both France and Germany. It has also been employed in our own country, by several individuals, among whom we may name Dr. STEPHEN BROWN, of New York. To this, the usage of a part of the physicians of the Philadelphia school forms so small an exception, that the title we have assumed may fairly be considered as that generally in use; and it is prevalent custom and concurrence that fix the meaning of language.

On the other hand, it will be found, that the term we have adopted, is, strictly speaking, more correct than that with which we are comparing it. The disease in question, like delirium generally, is of short duration—from two or three to fifteen days: mania is essentially chronic, lasting for months or years; and this is all that forms the distinction between the latter and the delirium of the nosologists. Why then apply language so incorrectly, and call that a *mania a potu*, which is no mania at all? Nor is this, as may be supposed by some, a mere nicety of verbal distinction, devoid of real, practical importance. It was a remark of no slight profundity, or limited application, which dropped from the celebrated MIRABEAU, that "*words are things.*" Whoever consults the papers on this disease published by Dr. KLAPP, which have exercised a very powerful influence upon the Philadelphia practice, will readily find, that that author has described, in the same paper, and with a reference to the same treatment, cases both of proper delirium and of long continued madness. Again, it is not uncommon for persons in the delirium produced by strong drink, to be kept in confinement, under a certificate from a physician, that they are affected with *mania a potu;* the confinement continuing for a length of time, while the treatment and cure of the case scarcely ever occupy more than one or two weeks. That means of security and protection should be provided for those unhappy beings who are addicted to perpetual intoxication, is a matter in which humane men cannot possibly disagree; but

it, at least, admits of a question, whether this can with propriety be done under a certificate founded in an error of language, and which is held to operate long after it has ceased to be correct.

Identification of the disease as described by Authors.—The disease of which we are treating, will be, in the ensuing pages, defined and described; but useful purposes may be answered by a reference to some of those published accounts with which I find it to coincide. We here see in a very strong point of view, the advantages of publishing collections of well-described cases. The writer of the present essay has not undertaken to add largely to their number, for reasons already assigned; but will enumerate several descriptions, to be found in print, as naturalists refer to plates, for the purpose of affording an additional certainty in the identification of the disease, by exemplifying his statements. He also wishes to derive the more confidence for his characters of the malady, from their corroboration by others.

The disease of which he treats, then, is the "delirium tremens," of Dr. Samuel Burton Pearson, well but briefly chalked out in his paper, originally published in a pamphlet form, but reprinted in the Edinburgh Medical and Surgical Journal, vol. 9. p. 326. It is that of Dr. Thomas Sutton, as described in his "Tracts on Delirium Tremens, on Peritonitis, and some other inflammatory affections, and on the Gout," published at London; in which will be found an excellent description of it, and a report of a mode of treatment which he found uncommonly successful, sketched in a manner peculiarly strong, natural, and distinct, and characterized, in a remarkable degree, by sincerity and a conscientious precision.

It is the "brain fever of drunkenness" of Dr. Armstrong.* From a reference contained in Dr. Hibbert's little compilation "On Apparitions," it seems to be the "delirium tremens" of Dr. Begbie, described in his thesis, published at Edinburgh,—a pamphlet of which we have not been able to obtain the inspection. It strongly resembles the curious cases of apparitions, described by Dr. Alderson, of Hull;† although, arising as it does from peculiar causes, and under peculiar circumstances, it cannot, at

* Practical Illustrations of Typhus Fever, &c. Potter's ed. p. 361. Also, Ed. Med. and Sur. Jour. vol. 9. p. 58, and p. 146; in 1813.

† Ed. Med. and Sur. Jour. vol. 6. p. 287.

least in every instance, be considered as of the same nature with them. It is generally known by the name we have employed, among the French and German writers, and Dr. ALBERS, of Bremen, has written a paper on it, by the same designation. Dr. GUERSENT, who writes the article on this subject in the Dictionnaire de Médecine, but whose remarks do not themselves possess their usual value, as he had no practical knowledge of the disease, furnishes us with a reference to FODERÉ, as describing an affection under the name of "*phrenesie essentielle, ou sans matière*," with which Dr. G. considers the disease which is the subject of our essay to be identical. We have perused all that we can find in the "Médecine Legale" of that writer, which appears to us capable of being referred to this disease; and are convinced that his "*frenesie idiopathique*" may perhaps include cases of the same disease, but is too imperfectly described for identification.*

In our own country, the disease has now been described by numerous writers.

The *thesis* of Dr. I. C. SNOWDEN, on this subject, published in the Eclectic Repertory, for 1815, p. 372, and reviewed in the first volume of the Philadelphia Journal of the Medical and Physical Sciences, is a very able paper, and one with which I can agree in principle on more points than with almost any other. Besides an accuracy and maturity of preparation, the more remarkable that it has not been equalled by all of those which have succeeded it, and which ought to have surpassed it, from their authors having been furnished with the lights obtained by Dr. S., this paper possesses the character of entire novelty. It appears to have been, what we have since learned to be the fact, drawn up without the knowledge of any previous essays on the same sub-

* We here append all he says respecting it.—
"La frénésie idiopathique, maladie rare dans les pays froids, que j'ai déjà observée plusieurs fois dans les contrées méridionales, presque toujours mortelle en très-peu de temps, caractérisée par un pouls petit, fréquent et serré, par la carpologie, le tremblement des membres et un délire continuel, furieux dans l'exacerbation, tranquille dans la rémission, ne peut laisser aucun doute; car, quoiqu'il paraisse quelquefois que le malade reconnaît les assistans et qu'il répond à propos à leur questions, un instant après il divogue de nouveau, et l'on voit que, semblable aux aliénés en démence, il n'a eu aucune conscience des discours qu'il a tenus."—FODERE—T. 1—p. 264.
From this it appears evident, that in France, as well as in England, it has been confounded with phrenitis. Vide, note at the end.

ject; and was actually the first printed account of the disease published in America, a country which is so much subjected to its ravages. Dr. SNOWDEN's thesis was written in 1814, and published in 1815. The papers by Drs. ARMSTRONG and SUTTON, and the reprint in the Edinburgh Journal of Dr. PEARSON's little production, were made public in 1813. Dr. PEARSON is undoubtedly the earliest describer of this disease in print, known to us; as his account of it was distributed in 1801. It forms but two pages of the Journal; and appears to have been altogether unknown in London, or probably in any other town in England than Newcastle and Sunderland. It seems to have been only circulated in the author's immediate neighbourhood, and among his personal friends.

"*An attempt to point out a new and successful method of treating mania a temulentia;*"—by JOSEPH KLAPP, M. D. &c.: in the Eclectic Repertory for 1817.—In this, the author principally advocates a gastric pathology, and a treatment consisting chiefly in emetics.

"*Observations on temulent diseases;*" by the same author; in the first volume of the American Medical Recorder, p. 462:—Here Dr. KLAPP further enforces and exemplifies his views, and extends them to many cases of convulsions.

The paper by our celebrated countryman, Dr. DRAKE, of Cincinnati, published in the American Medical Recorder, for 1819, relates mainly to *convulsions* from intemperance; and the "reverie" which he records in one instance, is not described in sufficient detail to enable us to make a close comparison.

A case, entitled "A case of mania a temulentia," was published by the late Dr. GILBERT FLAGLER, of Philadelphia, in the American Medical Recorder for the same year, p. 185. The editor, Dr. EBERLE, adds another case, in his remarks on the paper. In the same volume, at p. 180, Dr. EBERLE contributes a case of mental derangement from intoxication, cured by two emetics; the symptoms are not given: and at p. 478, another case is recorded by Dr. JOSEPH G. NANCREDE. This disease lasted for a period exceeding eighteen days, and did not entirely recover under the use of the emetics which he administered; but success seemed to be rendered complete by the cold shower-bath.

"*Observations on mania a potu;*" by JAMES M. STAUGHTON, M. D. This memoir, which is generally understood to be extracted from

the author's thesis, is one which does him great honour; and appears to me to contain the best exposition and defence extant of the emetic treatment. We find it in the third volume of the Philadelphia Journal, for the latter months of 1821.

"*Observations on Delirium Tremens, or the Delirium of Drunkenness;*" by Dr. STEPHEN BROWN, late resident surgeon of the New York almshouse; published in the American Medical Recorder for 1822. This is also an able essay, well furnished with cases, and savouring strongly of nature and of careful observation.

The disease which is our subject, then, is identical with the mania a potu, described by Dr. SNOWDEN, and by the reviewer in the Philadelphia Journal.

The same may be said of that described in Dr. KLAPP's first paper; with the qualification, that the description of his second case is not sufficiently full to furnish, of itself, sufficient means of judgment. Case third is, I should apprehend, a distinct instance of this disease, supervening upon a previously existing affection; and the description of the delirium in case fourth, is peculiarly striking and lively.

In Dr. DRAKE's paper, case third, that of Mr. J. seems, from the description of the delirium, to have been of this species; though a minute detail of the symptoms does not appear to have been the author's object. Of the next case I should have great doubts.

Dr. FLAGLER's case, as recorded, hardly presents a single attribute of the disease under consideration, or, in truth, of mania of any species. The subject of it appears, indeed, to have laboured for three weeks and five days, under very evident symptoms of *gastric* and other derangement, to which I should have been inclined to give the appellation of bilious fever, before any delirium is mentioned to have taken place; and then the characters usually attributed to mania a potu, are by no means described as having occurred.

In Dr. EBERLE's case, no description of symptoms and duration is furnished.

Dr. STAUGHTON's mania a potu is evidently the same disease. It is, however, a subject for future consideration, whether this author has not, like some other practitioners, described as symptoms what have really been complications of the disease.

The description and cases given by Dr. Brown, of New York, are, in our opinion, peculiarly happy; and correspond very exactly with the cases which we would designate as examples of delirium tremens; more so, indeed, than almost any others. With this general praise, I must be permitted to combine the remark, that his last case, that of W. R., at p. 202, appears to me to be capable of misleading. It is the only one which exhibited a group of symptoms characterizing *typhus fever;* a duration of twenty-one days, low, incoherent muttering, without being able to speak "an intelligible word," picking at the bed-clothes, a dry, brown tongue, inability to protrude that organ, a small, rapid, and feeble pulse, and inability to swallow solid substances. To these, I have no doubt, was superadded the affection of the brain which we have above described; as is argued by the very great relief which was derived from the administration of half an ounce of laudanum,—a very unusual practice in common typhus fever; but the circumstances mentioned above, and the benefit apparently derived from a salivation, and some other remedial means, very properly resorted to by Dr. B., forbid the idea that it was an unmixed case of the latter.

Description and Symptoms. Causes.—The remote causes of delirium tremens are capable of being defined with more distinctness than perhaps those of almost any other disease to which humanity is subjected. There is no authority within the writer's reach who refers the production of this delirium to more than a single source. It occurs in every case, so far as known, as a consequence of the sudden suspension of the use, more or less habitual, of a narcotic or narcotico-stimulant substance. In almost every instance, this substance is alcohol, in some shape; although I have seen well characterized cases, in which it was produced by the intermission of the use of opium. Tradition, at the Pennsylvania hospital, also confirms this last observation.

It is important for the reader to bear in mind, as we shall have repeated occasion to remark, that this disease is the result, not of the *application,* but of the *sudden intermission,* of the use of these articles. The writer of this is well convinced, that many of the errors and contradictions into which practitioners have been led, relative to this complaint, have arisen from their confounding the effect of the omission of strong liquors, with that

produced, directly, by the liquors themselves—delirium tremens, or mania a potu, with drunkenness.

We have said that the previous use of the narcotic substances must have been *habitual*. I know of no example, where, after a short intoxication for a few days, this disease has been produced by the cessation of drinking. In every instance, it has either occurred from the sudden change of a fixed habit, or at the abrupt termination of a debauch, or, as labouring people here generally denominate it, a *frolic*, of long continuance.

The most frequent *complication* of this disease with which I have met, and one of a peculiarly distressing character, takes place when it occurs in a patient suffering from a fracture. A man breaks his leg, during a long course of intoxication. He is placed in his bed; and from the natural unwillingness felt by himself and his relations, to admit the existence of the degrading habit to which he has addicted himself, the physician is not informed of the real state of the case;—he is subjected to the usual dietetic treatment, splints are applied, and for two or three days all appears to be well. At last the medical attendant is advised that his patient does not sleep at night, and that, at such times, he is "light-headed." Frequently this has been the case for two or three nights, before the physician is made fully aware of it. At last, attention is forcibly arrested by a violent paroxysm of delirium; in which the unfortunate sufferer is affrighted by various phantoms which appear distinctly before his eyes, flings his attendants aside with restless and apparently preternatural strength, and stumbles about the room, with or without the dangling appendages of his deranged splints. This is a state of things peculiarly embarrassing to the practitioner, and of which we shall have occasion again to speak, indicating at the same time an appropriate treatment. Many physicians refer the delirium, in these cases, partly to the irritation produced in the nervous system by the fracture; and partly to the change of habits arising from confinement to bed. We have taken especial pains to investigate this point; and are convinced, from the careful inspection of repeated cases, that the disease occurs with no greater frequency in patients suffering from fractures, than would arise, in all instances, from an equal interruption in the habit of drinking. It should be recollected, that a great proportion of the individuals admitted into public institutions with

injuries of this description, have received them while labouring under habitual intoxication, and very frequently in consequence of it.

The delirium, which is the subject of our essay, is also extremely liable to occur during the progress of fevers, and other inflammatory complaints; forming another complication, perhaps equally difficult to manage. As in this and the former instance, the patient is exposed to an antiphlogistic regimen and treatment, a part of which consists in debarring him from his accustomed stimulants, it is not an uncommon impression that the disease is aggravated by such regimen and treatment, in general, as well as by the particular privation to which we have referred it. Thus, in such cases, bleeding is frequently considered as increasing the tendency to the delirium; and advice is consequently given rather to suffer an inflammatory affection to continue, even at some risk of its exacerbation and future permanence, than to check it by a remedy which is capable of producing a condition much more to be dreaded. I have never been able, among numerous instances, to discover any foundation for this opinion. It appears to me to be founded on a vague generalization, which refers all remedial means to two general classes, and considers these, as well as the sthenic and asthenic states of the diseased system, to be in all cases diametrically opposed to each other. To this celebrated hypothesis, in a certain degree true, but involving the most serious error, the present is not the proper place to reply. Suffice it to say, that opium and alcohol act in modes differing very materially from each other, and from the more simple stimulants; and that bleeding, purging, and low diet are not the opposites to either of them, or are so but to a very limited extent, and under fixed and definite circumstances. Of the manner in which these articles act, with relation to the disease in question, we have yet to speak;—a knowledge of which is to be gained solely from the careful examination of facts, and not from vague theories. I am not afraid to deny roundly, that there is any evidence that bleeding and the antiphlogistic regimen in any degree promote the formation of delirium tremens. We shall revert to this very important point, when we come to the treatment.

Character of the Disease.—In few instances, perhaps, is a more striking and generally correct idea of a malady conveyed by its

mere appellation, than in the present instance. The most peculiar and glaringly obvious characteristic which it assumes, are the delirium, and in almost all cases, a peculiar and incessant tremor. The delirium, however, is of so peculiar a kind, as of itself to furnish, almost universally, the means of distinguishing the complaint. Besides tremor and watchfulness, it is marked by the occurrence, to the disordered fancy of the patient, of *apparitions*. Every thing, in this singular condition of the system, indicates a highly increased activity of the mental functions. Those affected by it continue, day and night, in one incessant excitement, constantly talking, thinking, fancying, and engaged in restless activity. In no respect, however, is it more curious than in the production of a belief in the presence of unreal objects, or of persons and things really absent. One patient sees dogs, horses, cats, mice, and other animals, continually crossing his room, or remaining in it; and abruptly interrupts his conversation with his physician, by pointing them out to him, and insisting upon their real existence in open sight, in spite of all persuasion. Another sees persons whom he knows, and holds conversation with them, and sometimes complains of the loss of sleep from their continued presence. Sometimes they are in unnatural situations—mending the roof, or pulling down the walls of the house. A patient, whose case is given by Dr. ALDERSON,* and who was obviously affected with this disorder, kept an oyster cellar, and first became aware of his own deviation from health, by discovering the unreal character of a quantity of phantoms of oyster shells, scattered over the floor, and which he was stooping to collect. A patient of Dr. KLAPP'S,† was troubled by two men, who were employed in pulling off his bed clothes with long iron hooks; and next morning the same heroes of his imaginings had ascended to the cupola of a palace, built, like that of the wood-demon of Silesia, *pro hac vice*, and were amusing themselves with boxing there. Not content with these gymnastic performances, they finished by beating their unlucky spectator very severely. Dr. ALDERSON'S patients repeatedly complained of the infliction of severe bodily pain by these productions of their own disordered intellect. A patient, in the Pennsylvania hospital, was found, one morning,

* Ed. Med. and Sur. Journ. vol. 6. p. 288.
† Eclectic Repertory, vol. 7. p. 259.

excessively fatigued with holding up the wall, which he conceived to be falling. In a few instances, though this is by no means a frequent occurrence, the sick man is under a strong impression that some persons are preparing to put him to death. This apprehension generally produces a silence and quietness which is liable to deceive the practitioner, and prevent him from giving credence to the actual nature of the complaint.

For further instances, some of them extremely amusing, of delirium of this description, the reader may consult Dr. KLAPP's papers, that by Dr. ALDERSON, and Dr. HIBBERT's extremely curious essay "On Apparitions." In the latter little work is contained an account of the celebrated case of M. NICOLAI, of Berlin; who, from causes of a totally different nature, was affected for a length of years with a similar succession of these "unreal mockeries."

My friend, Dr. CONDIE, has remarked, that there is a general preference, among these ghostly appearances, for a black colour; a circumstance which he conceives may serve, at a future time, to illustrate some point of the pathology of the affection. In many instances, within my observation, this has been verified; and black cats, dogs, mice, &c. have been the dramatis personæ; but in other cases, where human personages have appeared in the panorama, I have not heard any remarks that they differed from their usual complexion.

Another striking peculiarity which we have to notice, is the incessant activity of the muscular system. This is, in fact, a corollary from the description which we have already given, of the restlessness of the mind. The constant succession of thoughts and emotions, which pass through his brain, seem to keep the patient in an incessant exertion. He starts abruptly from the bed, to converse with, or avoid, the phantom figures which infest him; and continues on his feet, anxiously or cheerfully looking about him, even when reduced to the last extremity of weakness. Patients in this condition will ascend to the window in spite of remonstrance, when they are, at the same time, so weak that the slightest push will overthrow them, and when the pulse has ceased at their wrists, and a few minutes more are about to relieve them of all their earthly troubles. Their exertions exhaust

them so much, that it fairly admits of inquiry, whether this is not really the ordinary cause of death in the present distemper.

The incessant activity of mind and body, which I have endeavoured to portray, continuing throughout the night, produces a constant *watchfulness;* which appears to be coeval with the distinct and definable existence of the disease. When the patient enjoys sound and continued sleep, according to my observations and inquiries, he unfailingly recovers.

The *tremors* we have already mentioned, as a very general, though not universal, character of the disease. How far they are produced by the affection of the mind, and how far by a deranged action of the nervous cords of communication, or whether they be owing to fatigue, I shall not endeavour to ascertain.

Convulsions are described by most writers, as of frequent occurrence in delirium tremens. At this I am rather surprised, as such has by no means been the case, within my observation; those affections taking place so rarely, as to have induced me to believe, that they were not a constituent part of the disease, but merely accessory to it. One thing, at least, is certain, that delirium tremens is capable, in numerous instances, of existing independently of them, and of proceeding to a fatal termination, or a cure, without them.

I have now described those appearances, which have seemed to me to constitute the disease. They are all of the class which have been denominated *nervous.* It is necessary, however, to truth and science, to give a sketch of the condition of the system at large; in order to escape that favourite error of medical minds, an exclusive attachment to individual classes of symptoms.

Pain, which is so general an occurrence in disease of almost every species, and which is described as taking place in this complaint, by Dr. SNOWDEN, has never been observed by me in delirium tremens, either in the head, or any other part of the body. On the contrary, the occurrence of this state of the nervous system, seems, in an extraordinary manner, to supersede pain which may be actually existing at the time. Patients in this condition seem never to experience any suffering from fractures, though they may be, at the time, subjecting these to the most constant friction and concussion. And when this delirium supervenes upon a pleurisy, or other inflammatory affection accompanied by pain,

the principal disease seems to disappear, even to the eye of the experienced physician, to be reproduced at a later period, when the brain and nerves regain their ordinary tranquillity. A striking instance of this will be narrated, in a case appended to this paper.

Increased heat, like pain, a symptom of so many diseases, has never occurred in the cases under my observation, unless where it already existed, as the product of a previously existing malady. *Abdominal heat* is included in this observation; as we shall presently have occasion again to remark.

In this outline, we conceive it necessary to advert, in a particular manner, to the condition of certain organs, the derangements of which are so generally associated with those of nearly all others, that physicians are frequently led to suppose hypothetically, or to take for granted, their derangement in almost any given case. Habits of this kind, combined with the increased attention lately drawn to the affections of these parts, by a pathology, which may now be said to be the prevalent one of the day, have, we think, had their share in extending the impression or presumption, that delirium tremens was a disease primarily seated in the stomach. A pupil of the school of Broussais, who had not studied, in a particular manner, the disease before us, would be very apt to suppose, previously to a careful investigation of actual cases, that such was the fact; and in this he would find himself anticipated by Dr. Klapp, who has adopted a similar theory, and made it the basis of his therapeutical directions.

Several of my medical friends have informed me, that they have met with cases of this affection, in which various symptoms of gastric derangement co-existed with the peculiar delirium; and Dr. Brown, of the New York almshouse, mentions a foul appearance of the tongue as of frequent occurrence. The practice of the Philadelphia almshouse also has been referred to, as affording instances of this combination of symptoms. I have not been able to discover any of these stomachic symptoms, excepting where they were fairly referrible to the previous existence of another malady. In some instances, delirium tremens had supervened on some other distinctly characterized disease; and this last might occasion a foulness of the tongue, and a bad taste in the mouth, with eructations, vomiting, and soreness, heat, and

pain at the epigastrium. In many cases, and of a kind frequently confused with these, we had to deal with a direct irritation, arising from the previous intoxication. Drunkenness itself produces a fever, with gastro-cephalic symptoms; and under these circumstances, we could hardly fail to look for such appearances as we have described; and it would be by no means a fair inference from these data, that a delirium subsequently produced by the *abstraction* of the morbific cause, could depend on, or necessarily imply, the existence, at the same moment, of an irritation directly produced by that cause itself. It, however, appeared to me that these symptoms were positively absent—had actually disappeared, in a great majority, if not the whole, of the cases, before the delirious condition actually commenced; at least with the exception of a slight foulness of the tongue, an appearance which is known to require time for its removal. This distinction is one of the very highest importance, possessing the strongest and most direct bearing on practice; the gastric pathology of this disease having given rise, on the one hand, to an emetic treatment, and on the other, among the pupils of the modern school, to the more free inculcation of blood-letting—a remedy which I am bound to say, I do not believe to have any, the least material, control over the complaint; while, at the same time, it is highly destructive of life, and appears directly to diminish, in a most powerful manner, the strength which the system possesses, and so much needs, to enable it to contend against the approach of death.

Impressed with these considerations, I have given my mind for some years particularly to the establishment of the point, whether decided symptoms of gastric, cephalic, or any other inflammatory affection, existed as a necessary or prevalent part of the appearances commonly entitled *mania a potu;* and the result has been the conclusions above stated. I am sensible that these will be found to differ materially from the reports given by some practitioners; but I cannot avoid ascribing this circumstance to their confounding several distinct affections with that under consideration; as, for example, actual intoxication, a real bilious fever, an ordinary mania, either produced or not by this cause, and possibly, in some instances, an epileptic attack.

In the cases at the Pennsylvania hospital, very frequently,

either the interruption of the narcotic stimulant to which they had habituated themselves was made on their admission to the house, and the disease commenced under our eyes; or, in other instances, the individuals affected belonged to a more respectable class in life. In both these cases, nothing appears to have occurred calculated particularly to complicate the disease. I have been told by some of my medical friends, that, in the almshouse, a large portion of the patients affected with this disease, were admitted while labouring, at the same time, under the delirium produced by an irregular interruption, and the effects of a fresh stimulation, which served to produce a direct irritation in the stomach and bowels. These circumstances were aggravated by others, like them the result of misery and bad management. To these causes my informants referred the more frequent complication, in that institution, of delirium tremens, with a gastro-enteric irritation, and, perhaps, with a true phrenitis. Yet the experience of Dr. Snowden, in that institution, has not led him to record a single symptom of gastric disorder, except vomiting.

A foul taste in the mouth has not been a frequent, or by any means a prevalent, complaint among the patients, whom I have seen affected with this complaint. *Vomiting* was seldom so; and as every one of the symptoms which I have considered as essential, occurred, in a large number of cases, unaccompanied by the latter, I could not deem it at all a necessary constituent of the disease.

Local increase of heat in the region of the *epigastrium*. This has been considered, and justly, as one of the most important indications of gastro-duodenal irritation. In the smaller number of cases of delirium tremens, which occurred under my care, since I became better acquainted with the French pathology, I have searched diligently for this symptom; and can say with confidence, that it has not been present in them. At a former period, my attention not having been directed to this symptom with the same sense of its importance as at present, it would not be proper to speak in an equally positive manner; but, amid a large number of patients, it has certainly not been a frequent occurrence.

Any particular increase of *heat in the head*, I do not remember to have ever noticed; and it was positively absent in a number of

cases, specially examined for the purpose of ascertaining the fact.

The *pulse*, another indication of so much importance in the cognizance of inflammatory complaints, is, according to my observations, generally weak. It has never been greatly increased either in force, volume, or frequency, even when the delirium succeeds to a previously existing inflammatory disease; and it is in these instances alone that it is materially increased at all. In the progress of the malady, it rapidly diminishes; and it generally becomes imperceptible at the wrist for one or more hours preceding death, thus presenting an appearance of successive exhaustion.

The same gradual destruction of powers, resembling that produced by fatigue, has been already mentioned as occurring to the *muscular strength*.

Of the state of the *excretions* it is difficult to speak. *Constipation* has been almost universal; so much so as to give rise to the impression, that where evacuations of the bowels took place, they were owing to a complication of the original and more important disease. As, however, all the patients had taken more or less opium, this circumstance is quite sufficient to account for what we have remarked, without the necessity of supposing it to be a part of the disease. The urine is generally scanty; and the skin harsh and dry. In many instances, however, the skin is bathed with a profuse perspiration. Where this is apparently the effect of opium, it has always seemed to be a favourable sign.

The *appetite* is in most instances entirely superseded; although digestion of small portions of food will frequently go on, without any apparent derangement. When the mind is restored to its ordinary healthy condition, after a sleep of sufficient duration, a moderate appetite immediately returns, and the patient is capable of eating and digesting a light meal—a striking proof of the absence, in the unmixed cases, of any gastro-enteritis; as in those where the latter complaint had existed for a similar period, no convalescence could be so rapid as, at once, to restore the power of digestion.

Pathology. Having thus completed a sketch of the external appearances generally seen in delirium tremens, we proceed to inquire what inferences it is legitimate to draw, respecting the

condition of the internal organs, and to notice the points in which this differs from health.

Dr. Sutton does not give us any pathological reasoning; but contents himself with indicating the practice which he found successful—a practice which has saved a great number of lives, and from which we are shortly to draw inferences of our own. He might certainly have done much worse; as a hypothetical theory, or one not based upon an adequate comparison with facts, is likely to prove far more injurious than a practice, empirically established, and generally successful, though liable to occasional misapplication, from the want of a clear view of the purposes to be answered, and of their frequent complications.

Dr. Armstrong, in his "Account of the Brain Fever of Drunkenness," does not pretend to give us any very deeply considered pathology; but evidently refers the disease principally to a morbid condition of the brain. He appears to have fully distinguished it from the epidemic fevers which prevail in England; but seems still disposed to see an analogy between them. I apprehend, at least, that a very clear and important line of demarcation is capable of being drawn between delirium tremens, and any of the more ordinary forms of febrile delirium: certainly this is the case with any commonly to be met with, either in nature or in descriptions.

To refer the existence of a delirium to a vicious condition of the brain, is the first and most natural resource of a physician to whom the case is proposed; and it is apprehended that such was the general opinion of the medical world, till the epocha of the publications, and clinical instructions, upon this subject, of Dr. Joseph Klapp. This experienced practitioner, to whose opinions an additional weight was derived, from his public station as a physician to the Philadelphia alms-house, has extended to delirium tremens, the gastro-enteric theory, which has become so popular at the present day. Of the labours of Hamilton, Abernethy, and Broussais, as well as of the still later French pathologists, we would be far from wishing, were it possible, to diminish the reputation: they have, it is to be hoped, inestimably augmented the curative resources of the physician. But we apprehend that, in this instance, the reference to the stomach of diseases, whose symptoms are most conspicuous in other organs of

the body, has been carried too far, and has led to erroneous impressions, and a practice not the most successful. We shall proceed to consider it; taking for our guides the publications of Dr. K. in the Eclectic Repertory, and the able thesis of Dr. STAUGHTON, which is generally considered as the best setting forth of the opinions of the former practitioner, at a period when they had become more matured.

The grounds of the doctrine in question, as there stated, when arranged in a methodical form, may be fairly referred to the following heads; and we shall endeavour to express them so as to give them their fullest force.

1. The causes which produce delirium tremens, or mania a potu, are of a kind calculated, a priori, to produce the impression that an irritation exists in the stomach; as this affection never occurs but after a debauch.

2. On dissection, the corresponding appearances are found. The dissections, made or seen by Dr. STAUGHTON, uniformly disclosed an inflamed stomach; and similar appearances have been found by others.

3. Vomiting, a foul tongue, the discharge, in many instances, by the effect of an emetic, of a thick, ropy, viscid fluid, of about the consistence of boiled tar, generally of a light brown colour, but sometimes quite black; after the free removal of which, "recovery *most probably* takes place." All these are undeniable symptoms of gastric disorder, occurring in the disease under review.

4. The analogy of other gastric affections shows the very frequent occurrence of delirium as a symptom of them.

5. The success of vomiting, as a remedy, is considered by its advocates as sufficiently great to form an additional argument in its favour, upon the principle of the *juvantia* and *lædentia*.

To the first of these arguments we reply, that it is undoubtedly true that the application of irritating substances to the stomach, usually precedes an attack of delirium tremens; but it is equally so, that this application must have *ceased*. It is not *during* a debauch, but *after the termination* of one, that we commonly see the complaint occur. And in the instances where this disease follows the use of opium, although this substance is certainly possessed, in some respects, of stimulating properties, few

physicians, we imagine, would class it among the causes adequate to produce gastritis or gastro-enteritis.

To the post mortem observations of Dr. STAUGHTON and others, there seems, at first sight, to be more difficulty in replying. It must be acknowledged that marks, more or less decided, of gastritis and gastro-enteritis have been found pretty generally in the cases examined; and this is sufficient, according to the apparent habits of some morbid anatomists of no mean standing, to fix this as a leading cause of the symptoms. "Why need you search," it may be inquired, "for any further origin? Here is evidence of gastritis; and gastritis is capable of producing delirium! To ascribe the malady to any additional cause, is to offend against the Newtonian rule of philosophizing, by which we are forbidden to assign any more causes for a phenomenon than are sufficient to produce or explain it."

Such might be the language of one who was disposed to set this argument in a strong point of view; but we conceive that some very simple reflections will show it to be inapplicable. Gastritis is unquestionably capable of producing delirium; but it is yet to be shown that it can produce a delirium of this species. We are considering a mental derangement of a peculiar kind, possessing some very striking and characteristic attributes, and which, with extremely rare exceptions, is *never* found to occur under other circumstances than the familiar ones fully described above. It is, therefore, inconclusive to show that gastritis exists, and that such an affection may produce delirium; the question being precisely whether it can produce one of this kind. Again, the delirium of which we are speaking never occurs until after the removal of that irritating agent, which we are fairly entitled to indicate as the cause of the gastritis; nor, in fact, until the direct symptoms of gastric disorder have in a great measure subsided. The heat of the skin, soreness of the epigastrium, and, in a great majority of cases, the vomiting have all disappeared; and yet we are called upon to remove the consecutive delirium by attacking a gastritis, which was not able, while at its height, to produce any symptom of the same kind. In the fatal cases, it is by no means improbable that the simultaneous continuance of an uncured gastritis may, in many instances, have contributed to shorten the patient's life; and the redness of the stomach found

after death has been set down as evidence of the gastric origin of a cerebral disorder, capable, as the great majority, at least, of cases show, of coming into existence after all the distinct symptoms of inflammation of the stomach have entirely disappeared. Another argument may be drawn from the remark that the patients opened, had all been subjected to the action of highly irritating substances;—to that of large doses either of alcoholic drinks, or of emetic tartar. Is it fair, after the physician has himself violently irritated the stomach, to assign its redness after death as the cause of the disease he has attempted to remove? These remarks show the importance of not confining ourselves to the mere inspection of dead bodies, in investigating the nature of diseases, but of studying them *physiologically*, and of carefully comparing the morbid appearances with the derangement of the functions exhibited during life, and with the effects of the remedies employed. By thus analysing disease from an extended view of every accessible quarter, we avoid a part of the innumerable errors to which we are exposed by our limited means of information.

Vomiting and a foul tongue were, as we have already remarked, generally absent in the cases under our own inspection, amounting to a considerable number. Where they do occur, these appearances are probably owing to the previously existing irritation to which we have already alluded. It is by no means clear that these are symptoms of frequent occurrence. Authors mention them but slightly. Dr. Sutton scarcely recognizes their presence in his sixteen cases; except where there existed typhus fever, scarlatina, or some analogous complication or precursor. Dr. Brown, of New-York, whose accuracy of discrimination is great, and is aided, on this point, by an acquaintance with the writings of others more general than is evinced by many, and is furthermore maintained by the description of cases, has mentioned a foul tongue in only two instances, out of eight; and one of these, from the narration, appears to have been a low typhus of twenty-one days' duration.

A reply to the argument drawn from the analogy of other gastric affections, is contained in the remarks we have already made on the morbid dissections.

Finally, with regard to the inference from the juvantia and lædentia, we shall endeavour to show, when speaking of the *treat-*

ment, that the success obtained by vomiting has not equalled that which has followed the employment of different means. Here, in fact, the pith of the whole matter rests; but we shall further attempt to prove, that a partial success by vomiting is by no means a conclusive proof of the correctness of the gastric pathology.

Having thus expressed the grounds of our dissent from a pathology frequently assumed for this disease, we proceed to develop our own views. In doing so, we apprehend that little difficulty will be found, if a deliberate view be taken of the circumstances to which the patient is exposed previously to the production of delirium.

The known operation of spirituous liquors, and of opium, on the great organs of the human body, consists in an excitement of the circulation, accompanied by a depression of the cerebral functions. On the heart, the action of these poisons appears to be unquestionably stimulant;—there is no doubt that it greatly increases the distention of the arteries and the force of the pulse. But on the faculties of the mind, a great depression is the *leading* effect. In moderate quantities, and during the commencement of their operation, a state is produced, having a brief duration, which is frequently considered as exhibiting an increased activity of the mind. Cheerfulness, courage, and loquacity, are what generally characterize it; but its nature differs in a prodigious variety of ways, according to circumstances not well understood in the idiosyncrasies of the individuals subjected to it. Thus some are morose and irritable, others sullen, &c. In every instance, however, the intellectual faculties are deprived of their usual accuracy, and after a very short interval, somnolency and a general diminution of all the mental powers, are the unfailing successors. Hence, we have as the universal course of things, first, the fever of drunkenness, and then drowsiness, or a diminution of the activity of the mind. These effects are reiterated, every time that the poisonous draught is renewed; until, by constant repetition, the organs become more and more callous to the impressions they receive, and the well known *accommodating power* of the system accustoms it to bear the unwholesome agent with comparative impunity.

Now, it is in this state of habitual stimulation that the delirium

is produced; but not till the stimulation is suspended. The patient is suddenly interrupted in a long continued course of hard drinking. What is then the consequence? The temulent fever abates or subsides, from the abstraction of its cause; and the system immediately feels the want of its accustomed narcotic. It has been gradually changed, until the depressing agent has become necessary to the preservation of an approach towards health; without it, the patient is unable to sleep, and his cerebral and nervous systems are thrown into a state of the very highest excitement. Who can fail to perceive, in this, the production of an excess of activity, a superabundance of vitality, in the brain and nerves, requiring the habitual narcotic to keep it down to its ordinary standard?

This view of things ought not to be classed with ordinary hypotheses, or synthetic theories. However we may differ as to correctness in the use of language, a point in which it is peculiarly difficult to obtain common consent; the above is an expression of fact, of an occurrence which actually takes place, and is obtained by an analytical process from nature. The patient has been accustomed to the impression of an agent which diminishes the activity of the mind; it learns to obtain an approach to the healthy equilibrium, by resisting this narcotic; and, upon its sudden removal, passes immediately into a condition of inordinate action. Physicians who differ in the meanings which they attach to words, from a bearing which these have, or are supposed to have, upon other doctrines or principles, can hardly avoid recognizing here a common fact, having its existence in nature, however they may employ a different phraseology to express it.

If we analyse the condition of the patient at this time, we shall find every symptom indicating a prodigious excess of activity in the cerebro-nervous organs. The brain may be said to perform five or six times as great a task as in common circumstances. Not only is the ordinary waking condition continued during the whole twenty-four hours, the patient being incapable of sleep; but during all this time, the mind is in the very liveliest excitement. Incessant talking, and the incessant performance of voluntary motion, characterize the malady; and in addition to this, the mind not only apprehends the presence of objects really

presented to the senses, but forms a prodigious succession of ideal images. And when relief is obtained, the first sign of the disease being broken in its violence, is the obtaining of repose.

In this violent excitement of the *functions of relation*, do the muscles partake of the increased power? I apprehend that they do not. They are thrown into the most incessant, and sometimes, while strength yet remains, violent exertion, by the agency of the nervous apparatus: they are incessantly induced to act by the operation of the will. But if we examine a patient labouring under this delirium, we shall find his average muscular strength decreased, and as the disease advances, very much so. At the very time when he is reiterating his efforts to pass through the door, or to throw himself out of the window, the attendants have to be careful how they arrest his progress, as the slightest touch may throw him down; and frequently he walks about the room with the utmost eagerness, when within a few minutes of the termination of his being.

I would go so far as even to say, that the patient appears to *die of fatigue*. The contractile force of his heart diminishes, with a progression which may be distinctly watched, until the minute and thread-like pulse at the wrist vanishes quite away; and this is accompanied by a corresponding ebb of the muscular power. Something like this, indeed, seems to be the generally received opinion of the cause of death in most diseases. The philosophy of Dr. Broussais refers it to fatigue, or exhaustion of the organs; but this means, in general, of the viscera of organic life, whereas we here include the muscles. If, according to the ideas of Bichat, we refer the immediate production of death to a cessation of action in the muscles of respiration, and the consequent want of aeration of the blood, it will harmonize not badly with the views expressed above. What then is the condition of the parts which carry on the motions of organic life? Here we again meet the gastric doctrine of Dr. Klapp. We have seen that there generally exist the remains of a declining irritation in the *stomach*, from the debauch which preceded; except in the case of opium, in which this is very questionable, as it is at least extremely doubtful whether opium can produce any irritation in the stomach. In poisoning by opium "the condition of these organs is usually

not much varied from the healthy state."* Such is the statement of Dr. Beck; and several dissections which I have made have confirmed it; the stomach being found enlarged and flabby, but very little reddened, even when it had been subjected to the action of violent emetics. In one case, in which the stomach tube had been employed, and no emetics administered, the stomach was of enormous size, but manifested no signs of sanguineous irritation.

Again, when the disease is cured by a long and sound sleep, a result which frequently takes place in twelve hours, the patient, in two or three hours after awaking, generally feels a return of appetite; an occurrence certainly contradicting the idea of the stomach having been inflamed. An irritation of such violence could not reasonably be expected to disappear so suddenly, unless where there had been some very copious discharge. The stomach, during delirium tremens of any severity, is in a state of entire inaction. The sufferer cannot be prevailed upon to take food, or more than a mouthful. He is like one under the pressure of important and engrossing business, who has not leisure to think of eating. Vomiting, so far from generally existing, as in gastritis, seldom occurs spontaneously, and is produced, according to those who employ it as a remedy, with great difficulty, and only by the use of very large doses of emetics. The *bowels* are slow, and require a laxative or an enema, after the relief has been obtained by opium: this may however be owing to the opiate practice; and in the emetic treatment, they are liable to be affected violently, and to require opium to give them tranquillity.

To the condition of the *circulating organs*, we have already alluded, in speaking of the heart. I do not know that there is any peculiarity in the contractile action of the arteries; the pulse seeming to vary in tolerably exact proportion to the force of the systole of the heart. The *capillaries* of the surface are generally rather empty, and the skin, cold and pale. The different *excretions* and *exhalations* are diminished, excepting that the patient is sometimes bathed in a profuse perspiration.

In the 91st number of the Edinburgh Medical and Surgical Journal, which has just come to our hands, we are furnished with a brief notice of

* Beck's Med. Jurisprud. v. 2. p. 401.

delirium tremens, in a review of the Medico-Clinical Reports, for 1823-4, of professor Carlo Speranza, of Parma. This yields us a glance at some of the authorities from the interior of Europe, not accessible to us in this remote part of the world. Dr. Speranza determines in favour of the pathology and treatment recommended by professor Joseph Frank, viz. those of an absolute phrenitis, or encephalitis as it is now more usually termed. We pass over a discussion in which the term "*tremens*" is objected to, on the ground that tremor is not always present; while "*tremefaciens*" is unaccountably substituted for it. Dr. S. objects to "delirium" as the generic name of the disease; because he considers the perversion of the mind to be a mere symptom, while "encephalitis" is the real malady. We will only reply, that the term "delirium" expresses exactly what is wanted, namely, the whole extent of our actual knowledge with regard to the essence or nature of the disease; while "encephalitis," at best, implies an hypothesis, and one which is certainly erroneous. Dr. Speranza, after Frank, decides against the use of opium, and in favour of an antiphlogistic treatment; several eminent names being cited in confirmation. The authority of these latter, as quoted by the reviewer, merely applies itself generally to "derangement by habitual intoxication." We have already adverted to the ambiguity of such phrases; and endeavoured to show that very different states are included under them. We are very sure that the above practice would destroy the great majority of our cases, without effecting any material benefit. We shall discuss this point, when we come to consider the *treatment;* our account of which, with an analysis of some of the printed opinions, is intended for the next number of this Journal.

ARTICLE V.—*Morbid Anatomy, considered in its relation to the Practice of Medicine.* By THOMAS D. MITCHELL, M. D. of Frankford, Pennsylvania.

THE object of these remarks, is to show the fallacy of autopsic examinations in determining the nature of disease. There appears to be, at the present time, especially among those who yield to the influence of the French *theories*, an unusual predilection for this method of attaining true pathological views. Hence, in all their writings we shall find, that the use of the knife after death is regarded as a dernier resort, an infallible mode by which to ascertain with precision the seat of morbid action. The symptoms may have been unequivocal, the ruling epidemic, of unquestionable character; yet all is to yield to the unerring standard of a

hasty dissection, the result of which is supposed to settle the matter unalterably.

Now, against all this, however much popularity may support the practice, I feel myself bound to protest. Not that I object to careful examinations of the body after death; by no means: these are frequently very desirable, serving not only to gratify the curiosity attendant on obscure cases, but also to satisfy the practitioner himself, as well as the friends of the deceased, that all had been done that could be effected, and that medicine was inadequate to a cure. In addition to this, dissections necessarily refresh the practitioner's anatomical knowledge, and keep alive in his mind the peculiarities of the different structures of the animal economy. It is the abuse of dissections only that I condemn; their perversion and misapplication, by which theoretical views are attempted to be established, which facts and similar dissections subsequently overthrow. If the symptoms of a case, its relation to some prevailing disease, or its existence in a family strongly characterized by the hereditary predisposition, be not competent to determine its true character, I defy the knife of the anatomist to settle the difficulty, however dexterously it may be managed, and however great a display of morbid structure may be thus developed.

My objection is applicable, not only to him who takes up the knife to confirm opinions supposed to be fixed, but also to the inquirer who dissects with the view of forming new theories of disease. Both operate in the dark; and it is impossible that any permanently satisfactory conclusions can result to either. Let facts be heard on this subject.

A. B. has laboured for a long while under all the symptoms of pulmonary consumption. Not simply by one physician, but by the combined researches of a consultation of unquestionable eminence, the character of the disease has been unhesitatingly established. The curative means adapted to the morbid state of the parts supposed to be affected, are fully applied; but without any satisfactory results, and the patient presently dies. Anxious to confirm their pathological views, the medical gentlemen in attendance resolve on making the usual examinations; when, lo! a perfectly healthy state of the lungs confounds all their calculations.

The liver only is affected, and that but very partially. Such a case has actually occurred.

Let us suppose that the body of the patient just noticed, had fallen into the hands of some one unacquainted with the history of the case, but anxious to examine every subject as opportunity offered. Is it probable that the least suspicion would have followed an examination of the chest, that the patient had died of pulmonary consumption? Is it not more probable that a disciple of Broussais would have detected gastritis or gastro-enteritis only, or some other affection founded on a morbid state of the mucous membranes of the stomach and intestines, although no such disease had existed? But it may be said by one whose medical faith fastens on no object but the morbid appearances of parts, were not the physicians who pronounced the case to be phthisis pulmonalis altogether mistaken? Did not the post mortem examination prove the fallacy of their opinions? I answer in the negative. Dr. Rush, and some others more indistinctly prior to him, taught the doctrine, that a metastasis of disease sometimes occurred in the very act of dying; and that on no other principle could an organ be obviously and violently deranged, and yet exhibit on dissection no traces of disease. The cases of alternate morbid action in the brain and uterus, affecting the one with excruciating pain, and by its agency in the other producing wild delirium, are insolvable on any other principle. Cases of this kind are not unfrequent. During the fit of pain in the uterine region, the brain is unaffected, the patient sensible and aware of all that transpires around her. No sooner does the uterine fit begin to subside than the brain is seized, and presently the patient is furious. In this condition she dies; and, although dissection shall discover a highly injected condition of the uterine vessels, the brain will be found to exhibit a healthy appearance.

Is not every one, conversant with gout, acquainted with the fact, that a patient labouring under that disease in the great toe of one foot, shall retire to bed and be aroused from his slumber with burning lancinating pains in the corresponding toe of the other foot, while the toe originally affected shall exhibit scarcely any marks of morbid action? If these things are so, and that they are is obvious from daily experience, why shall we not apply the principle

which seems to regulate them to other cases, equally inexplicable by the usual modes of medical reasoning?

But, it may be said, is it credible that a metastasis of inflammation could occur between the brain and uterus, and if so, on what principle can it be explained? I answer, that the difficulty of solving the problem cannot alter the facts of the case; and there is nothing more incredible in the translation of inflammatory action from the uterus to the brain, and vice versa, than in the metastasis of gout again and again from one toe to another, which I have seen occur several times in the same patient.

I am indebted to a medical friend for the history of a case, which would perhaps be still more puzzling to those whose main dependance is on autopsic examinations. A patient died after a very short illness of a disease, so indistinctly marked as to be involved in great obscurity. Not a symptom existed to warrant a suspicion of disease in the chest; but on examination after death, a large quantity of pus was found in one side of the chest, and the lung of that side nearly destroyed. Now, who that knew nothing of the previous history of this case, would have conjectured that a patient thus situated had exhibited no symptom of pulmonary affection?

The deceptious reasoning founded on examinations after death, has been the occasion of much confusion in relation to yellow fever. Patients have fallen victims to this malady in innumerable instances, whose disease had been otherwise named, for no other reason than because the stomach and other parts failed to exhibit the appearances supposed to be essential; while others have been classed among the victims of yellow fever, whose systems never felt its influence, merely because such a condition of parts existed as was thought to characterize that disease. The most experienced writers on this terrible pestilence, assure us of the fallacy of dissections; and that the most marked cases of yellow fever, have frequently been unaccompanied with those morbid appearances, which dissection is thought to furnish as decisive of the existence of the disease. It was not the wild and chimerical notion of an enthusiastic theorist, but really and in truth a matter of fact, "that morbid action is sometimes so violent, as to transcend the point or grade of inflammation;" and for this reason, and none other that can be imagined, have examinations after death from yellow

fever failed in many instances to display an inflamed condition of the stomach. And yet the absence of this very condition of the primæ viæ, was offered in my hearing but two or three years ago, as proof unanswerable, that an individual, whose disease was pronounced to be yellow fever, did not die of that malady. Bichat and others have noticed a very important fact, that has not a little bearing on the present question; viz. that the nervous membrane of the stomachs of persons who had suffered capital punishment, was frequently injected to such a degree as to denote inflammatory action, although no symptom of gastric derangement had been apparent immediately prior to the time of execution.

In the year 1810, a man was brought into the Philadelphia Almshouse, who had received an injury somewhere in the vicinity of the left clavicle: he was intemperate, and laboured under a partial degree of delirium tremens at the time of his admission. On the day of his death, he was prescribed for by the attending surgeon, who saw nothing in his case of an alarming or even suspicious character. There was no evidence of any diseased action in the chest, much less of actual disorganization in the very citadel of life. In an hour or two after the attending surgeon had left the house, this unfortunate man died. On examination of his thorax after death, an abscess was found in the pericardium, from which more than a pint of well digested pus was sponged out. That this abscess must have been the result of at least several days previous inflammation, can scarcely be doubted, and yet no correspondent symptom was apparent in the case. Is it not altogether probable that a dissection thus made, independently of an acquaintance with the previous history of the patient, would have led to a conviction that disease of the pericardium, or of the heart itself, had been manifest in the last illness of the individual?

In the year 1823, I lost a young patient, whose disease, so far as symptoms denoted, was gastritis, accompanied by a defective secretion of bile. None of the remedies that were administered, had their usual or desired effect; and at the expiration of the second week the child died. I examined the body after death, in the presence of a medical friend and several other persons, and found the liver and stomach free from disease; but the duodenum impervious to any thing larger than the calibre of a common goose quill. The argus eyes of one in quest of inflammation of the

mucous membrane of the stomach, might possibly have detected some red vessels here and there in the lining membrane of that viscus; and it may be that no examination of the duodenum would have been attempted, on the supposition that enough had already been detected, to give ample confirmation to the conjecture that gastritis had accomplished the fatal result.

In the year 1824, a female under my care, died of what proved on dissection to be a dropsy of the left ovarium. The distended and encysted mass had fallen to the right side of the pelvis, and all the complaints of pain were referred to that region. So liable are the best informed to be deceived, that Dr. PHYSICK actually supposed that a sac on the mesentery was the occasion of all the mischief in this case.

I might go on to detail cases of this sort from my own observation, and to quote a host on the authority of the best writers; but enough has been said for my present purpose. My chief aim has been to exhibit the folly of relying on *post mortem* examinations as a guide in the practice of medicine. Hundreds of dissections are made avowedly for the purpose of giving to their results a practical application, although this end is *seldom*, perhaps *never* accomplished. Sure I am, that I have not in a single instance derived any aid in the treatment of disease, from autopsic examinations, further than such dissections had a tendency to extend my acquaintance with the structure of parts. How should it be otherwise, when we see daily that dissection entirely disappoints our views; presenting structural derangement in organs, which evinced no sign of disease, and showing a healthy condition of parts, which seemed to be, so far as symptoms could give evidence, violently disordered?

A medical friend, who had made the tour of Europe, returned home a few years ago, armed at all points with the fashionable doctrine of inflammation of the mucous membranes. He commenced the practical application of his newly acquired system, in the treatment of cholera infantum, which was then the prevailing disease. He made a number of dissections, and endeavoured to convince his brethren who witnessed them, that his views were just; although some of the gentlemen assured me, it was impossible to detect that inflammation of the lining membrane, which was essential to the justification of his treatment of the disease.

The blindness of others did not, however, obscure his vision; and he felt emboldened by the very results, which destroyed the confidence of his brethren in the pathological views he had espoused. But it did not require a great length of time to convince him that he was mistaken; and he was constrained to resume the more popular and safe method of combating the malady.

Notwithstanding the specious asseverations to the contrary which are made by many, it is as true now, as it was in the days of SYDENHAM, that the practice of medicine is bottomed on experiment; and his plan of giving a medicine, and waiting to see what would be its effects before he repeated the dose, is, with a little modification, the sum total of all the therapeutics of more modern times. We must form our judgment from all those indications which go to acquaint us with the actual state of the system. The obvious symptoms of the living diseased body, and not the more deceptive appearances of the lifeless carcass, must direct us in all our prescriptions.

Let me not be misunderstood in these remarks. I am far from objecting to physiological researches; on the contrary, I think it indispensably necessary to the formation of a physician, that he be well instructed in the organization of the human body, and familiar with the functions of all its parts. Nor do I object, as has been already premised, to an acquaintance with morbid anatomy, so far as the knowledge thus obtained may serve to give correct views of the difference between healthy and diseased structure. But when it is proposed as the *sine qua non*, to mark out the straight line of pathological instruction, I not only object, but solemnly protest against it, as an *ignis fatuus*, that must inevitably deceive.

ARTICLE VI.—*Observations on the Treatment of Curvatures of the Spine.* By J. K. MITCHELL, M. D. one of the Physicians to the Pennsylvania Hospital, and to the Alms-house Infirmary.

IN consequence of the partial success of the plan of treatment recommended in a former number of the North American Medical and Surgical Journal, I have been favoured with an opportunity of seeing a greater number of cases of curved spine, than falls

under the observation of physicians in the course of ordinary practice. From the more extended experience thus afforded me, I have derived increased confidence in the treatment there laid down. I am now disposed to believe that an *early* application of, and judicious perseverance in, the means suggested, will secure, in most cases, an exemption from the disagreeable and encumbering deformity to which such diseases usually give rise. I am even led to hope, that where the deformity has already become great, the patient, *if young*, may recover to such a degree, as to be able to conceal as much of the curvature as cannot be entirely removed.

It is very difficult, during the progress of antero-posterior curvature, to ascertain its immediate cause. The evidence of a carious state of the vertebræ, is never, or at least very seldom, conclusive. That such a state of the bony structure must occasionally exist, is shown by the demonstrative examinations of the morbid anatomist. But the symptoms by which we are to distinguish it during life, from disease of the ligaments and interosseous cartilages, are not yet clearly ascertained. It is not *certain*, therefore, that in any of the many cases of antero-posterior curvature, which presented all the common signs of diseased bone, the bone was truly carious; but it was probably so in all; and as, in all the cases of this species of curve, which were properly treated* by the suspensory apparatus, beneficial results followed, am I not entitled to believe, that in these, the most unpromising cases of this malady, this mannner of treatment may be recommended?

In *very young* subjects, the *lateral* or *serpentine curvature* is usually easily remedied; and that, too, without such restraint or confinement, as, in the ordinary mode of treatment, impairs the tone and vigour of the constitution, and, according to the authority of Mr. SHAW, produces augmented weakness of the more solid portions of the spine itself. But in those cases of this curve, which happen to girls just approaching the age of puberty, the cure is much more difficult. It is, therefore, of great importance to ascertain the true causes of such affections, as we may then readily

* In several cases I could not prevail on the parents to compel the obedience of the patients; and the treatment was consequently imperfectly and irregularly applied. In some cases, the roughness of the floor, and the smallness of the apartment, denied to the patients the benefits of exercise, while placed in either the chair or spine-cart.

prevent what we cannot easily remedy. The alarming increase of a disease so inimical to the graces of form and carriage, renders such an inquiry doubly interesting. Those who are most liable to it, move in that circle of society, in which the sentiments are most carefully cultivated, and a highly educated taste is a customary possession; and where, consequently, a distorted figure, and ungraceful carriage, will ever be considered a severe calamity. When we carefully examine the habits and customs of those who are the most usual subjects of lateral curvature, we are immediately disposed to ascribe their maladies to the following causes:

1*st*, To the too early restraints imposed on the sportive and more active exercises of girls.

A few years ago, a girl, at thirteen or fourteen years of age, was treated as a child, indulged in the sports and gambols of childhood, and permitted to make free use of the muscular system, and thus to acquire muscular vigour. It is now unfortunately otherwise. The child, at eleven or twelve, is carefully incased in a laced corset, which, with the aid of a stout board or piece of iron in front, ties down the muscles of the back, and effectually restrains the free and graceful motions of the trunk. A slight rotary motion of the spine is scarcely practicable, and to stoop is almost impossible.* Even with such a paralyzing incumbrance, the poor child might find, in robust sports, some muscular exercise; but, with the corsets, come other restrictions. While the child is permitted to lace tightly enough to emulate the form of womanhood, she assumes, and is encouraged to assume, the considerate movements of maturer life. She may dance, but she must not "pull and haul;" nor must she engage in any action by which the muscles of the spine and back are exercised.

Among the natural consequences of such management, are great debility of the muscular system of the trunk, a relaxed and atonic state of the ligaments of the spine, and such a condition of the bone and interosseous cartilage as predisposes to diseased structure.

The partial exercise of the muscular system, is nearly as dis-

* Dr. Physick thinks that lateral incurvation of the spine, depends mainly, if not exclusively, on the use of tight corsets, or other confining vestments; and declares, that in the first stage, the curve may be removed, merely by throwing aside such fetters, and using appropriate exercise.

advantageous to health, as the total want of exercise; hence girls, at the age and under the circumstances stated, are liable to considerable irregularity in the digestive actions, and to occasional deviations from a healthy state of the skin. The former is indicated by all the usual manifestations of dyspepsia, particularly a loaded tongue and unpleasant breath, irregular evacuations and whimsical appetite; the latter, by a dry and scaly eruption. The pressure which corsets too tightly applied to a young frame produce, particularly when efforts are made to form a waist before the proper time, must deprave the functions of the abdominal viscera, and impair the free motion of the ribs, so important to the salutary performance of respiration.

A girl of an originally feeble constitution, or of a scrofulous temperament, is, under the circumstances stated, in imminent danger of either curved spine or consumption. The occurrence of the latter often prevents the onset of the former, by *concentrating the elements of irritation* in the lungs. The access of the former, is often, very often, followed by the latter; and most commonly, consumption of the lungs decides the fate of the patient. In a few cases, caries and psoas abscess are found in the train of curvature originally serpentine. Robust forms may resist the influence of the worst physical education; and marked curvatures of the spine, do not, in this healthful city, arise in a large proportion of the females subjected to the greatest restraint. But slight deviations from a correct form, are more common than would be supposed by one, who has not given particular attention to the subject. This deviation is, in every female case which has been subjected to my scrutiny, caused by a convexity of the spine towards the right shoulder, and a similar convexity towards the left hip; or, in other words, the line is serpentine, bending to the left side below, and to the right, above.

This direction of the curve may be traced to the second cause of lateral incurvity in growing females; viz. Errors of posture while sitting, standing, and lying in bed.

According to the present system of fashionable education, a posture nearly that of which I am now treating, is assumed for the greater part of the time passed in the school-room. The young female, taught much less needlework and housewifery than was formerly fashionable, is employed steadily at a desk, in

writing, arithmetic, drawing, map-making, constructing mathematical diagrams, &c. &c. &c. With the left arm resting on the desk, and the head and left hip bent towards the left side, the pupil presents an incurvity temporary at first, but gradually acquiring a fixed character. At the desk, is passed a much greater time, than was formerly thought requisite; and when the poor girl leaves it for the harp, her posture is again that which is favourable to the production of deformity. It is surprising to see the ease with which a child, thus educated, falls into the habit of resting her left arm on her left knee, and taking, in moments of relaxation, the curve which use has rendered most comfortable. If the time which is not included in school hours were suffered to glide away, partly in vigorous and appropriate exercise, all the crookedness enforced in school, would, in most cases, be overcome by the tendency of healthy structure to maintain its natural and graceful erectness. When exercise is resorted to, the confining and perpendicular corset withholds the muscles and ligaments of the spine from all participation. But the lessons are of such a character, as to difficulty and length, that a girl of any spirit and emulation cannot indulge in exercise, save of the mind.

According to the notions deduced from the former treatment of spinal diseases by recumbency, we might suppose that the couch of repose would tend to exert a counteracting influence, and would, partially at least, restore the straightness of the figure. Just the contrary effect is produced by the bed. For reasons well known to physicians, most children sleep on the right side. In this posture, in a feather bed with a high pillow, the right shoulder sinks deeply into the down, or is thrust towards the right side, the head is extended to the left, and we have again the *common* curved condition of the spine. Is it surprising that a delicate girl, whose general health is impaired by so many causes; whose inspirations of even the foul atmosphere of a crowded school, are unnaturally limited, should *bend* beneath the weight of such a host of causes of crookedness? Nay, is it not wonderful that any female form should remain perfect under such a system?

Having pointed out the prominent causes of such incurvities, it will be an easy task to show the mode of preventing them.

And, 1st. Let no child wear corsets until the form has attained to nearly its full height, and acquired strength and consistency.

2dly. Let such exercises be permitted, and indeed commanded, as are likely to give full play to the muscles of the trunk and spine. The dumb-bells, and more particularly a spine-swing, without the suspensory apparatus, are among the best means of this kind.* The act of polishing furniture by rubbing it, is also a useful exercise of the same class of muscles; but to afford a full benefit, the motion of the arms should be from side to side rather than backwards and forwards. The writer of this paper has often admired the erectness and fine muscular development of the Chinese boatmen; who, in the propulsion of their vessels by "sculling," perform such a lateral motion as is here suggested. In them too the muscles of the back are remarkably beautiful. While I *insist* on the exercise of the muscles of the trunk, I would not be supposed insensible to the value of exercise of all kinds, particularly in the open air.

3dly. Great pains should be taken to prevent the errors of posture so common in our schools. The desks should be so constructed, as to admit of the pupil's standing and sitting alternately; while much less time should be consumed at the desk, at which the pupil should not be permitted to prepare such lessons as do not *require* its use. It has been supposed that seats without backs are most suitable; but on such seats the pupils will assume the lounging posture, which throws the left arm on the left thigh for support, and exhibits a very ungraceful incurvity of the spine. When a child is not in muscular action, its muscles should be in a state of repose; and, therefore, the seats should have an easy backward slope, the most favourable to rest. Nothing exhausts muscular vigour more quickly than a state of continued muscular tension, such as is exerted in standing still for a considerable time. The same remark is applicable to the sitting upright without support. The inclined plane, now so much in vogue in Europe, acts on the principles here laid down.

4thly. The feather bed and high pillow should be supplanted by a mattress and very small pillow, without bolster; and the children should be taught to sleep in various positions.

5thly. In *cities*, at least, the first symptoms of indigestion in

* The girl must stand in such a swing, and keep it in motion by her own efforts.

growing girls, should be carefully removed; and that too by such means as are calculated to give tone and vigour to the whole frame. The cure should be attempted, as far as practicable, without resort to the use of drugs. Among the best means for that purpose, are the cold shower bath, riding, if convenient, and a total suspension of the exhausting mental exercises of the school. If such measures should prove unsuccessful, let there be applied such a *medical* treatment as the case may itself suggest. As a defect in tone, or strength of digestive action, is apparent, we might be led, by the evil influence of a name, to the use of *tonics*, as the systematic writers on materia medica have absurdly denominated an incongruous assemblage of salts and bitters, of acids and alkalies. Such medicines often augment the appetite, even to a degree of voracity, without producing a corresponding force of digestion; while, in the cases to which reference is now made, there is more frequently atony of the bowels, than debility of the stomach; more commonly defective hepatic, than feeble gastric action. In conformity with such views, the best *tonics* are medicines of the class *cathartics*, among which rhubarb or jalap, with sup. tart. potas. has been found most useful. To do much good, such medicines must, when resorted to, be applied to the case *perseveringly*. A considerable experience with cathartics has convinced me, that, when irregularly taken, they increase the torpor of the intestinal canal; but when regularly employed, for a *considerable length of time*, they most frequently leave the bowels in a healthful and active condition, and with power to sustain themselves in the improved state. This conclusion is the result of facts and experience; but contrary to that which is *taught*, relative to the use of cathartics. It is true, that for some time there is a call for the gradual increase of dose; but, beyond a certain period, there arises a necessity for its gradual diminution, until at length it is known that there is no longer need of any artificial aid. Why should it be otherwise? The medicines used do not impair the tone of the stomach, and they remove the burdensome load of feculence which rests in the bowels. Very soon, in almost every case, renovation of health is perceptible in the countenance, the tongue and skin, clearly indicating that the system, if it suffer at all from such medicines, suffers less than from the evils which they remove. After a time, the intestines become habituated to

regular evacuations, and unaccustomed to the presence of a load of feculence. Their tone is braced by the return of general vigour; and, while they and the liver are taught to act again in concert, care is taken to remove, by the gentlest measures, that which would oppress them. At length, by increase of irritability, by consentaneous hepatic action, by the promotion of constitutional energy, by the power of a regular habit, the digestion returns to its wonted healthfulness, and the very seeds of the distemper disappear. The *fæces* themselves become sufficiently stimulating, and tend, as in health, to promote their own evacuation.

Unfortunately for the poor girls in whom such symptoms appear, little attention is paid to them. The ease with which older females bear habitual costiveness, and the frequency of this complaint among *them*, render mothers and teachers insensible to the long train of ills, which may ensue from them in growing girls. They are, therefore, either entirely neglected, or subjected to the action of medicines of a domestic character, which tend to weaken the tone of the stomach, and to increase the torpor of the bowels. At the period of life of which we are treating, the mother or teacher ascribes every disease to a single cause; and endeavours, by hot and stimulating articles, to produce a result which is scarcely ever accelerated by such means; and which is too often prevented from appearing, by injudicious and untimely applications. Meanwhile the disease is gaining ground; and, after a time, the inclination of the head to the left side, and a slight but awkward elevation of one shoulder, are charged on the child as a piece of affectation, and she is tormented with chidings and posture-lessons. No suspicion is excited as to the true cause of such deformity; which arises, however, in every case, from a slight lateral incurvation of the spine. It is to counterbalance the right lateral bend of the backbone at the shoulder blades, that the head is thrown to the opposite side; but very soon a more unseemly counterbalance is discovered in the left lateral curve of the lower part of the spine, by which the left hip is made protuberant. When this is effected, the head is carried with a better grace, and hopes are entertained of a speedy rectification of what is supposed to be a mere voluntary error of carriage. But while the girl is subjected to all the evils of a modern fashionable edu-

cation, she can *never* recover. The deformity *will increase*, and such a disease be instituted as is truly lamentable, and almost hopeless.

The lateral incurvation, which appears at the approach to puberty, is not, so far as I have observed, complicated with any tendency to a carious state of the spine; for not one case of this kind has been followed by antero-posterior deformity—a deformity uniformly produced by a wasting of the vertebræ. But, on the other hand, serpentine curvature *in very early life*, is almost always followed by the angular projection which is usually ascribed to caries; and in such cases, the latter form of spinal disease ends the life of the patient. I have at present under my care, several cases of lateral incurvity, which have been, in their progress, complicated with angular projection of the spine, in all of which the patients are yet under eight years of age. I am also in attendance on several cases of lateral curvature, in which there seems to be no tendency to any other disease of the spine. These are all females, and more than thirteen years old. There is, then, a marked difference in the degree of danger of lateral curvature of the spine, as it presents itself in children, and in those who are approaching the period of puberty. In one class, it is a disease arising out of constitutional tendencies, and is ordinarily accompanied by a scrofulous temperament; and is not only destructive to the beauty of the form, but also painful and perilous. In the other class, it is the effect of the usual accidents of posture, and the debility superinduced by bad diet, indolence, and an insalubrious atmosphere, by excessive mental exertion, and the total privation of healthful regular exercise. Besides, it is seldom painful, and hardly ever attended with danger. It is not improbable that, in the latter class of cases, some may be found, in which the one disease produces the other, but this has not occurred under my observation.

Whether lateral incurvity appear in a child, or in one who has passed the age of childhood, it is highly important to apply remedial measures promptly and patiently. If we fail to arrest the disease in the child, we may look for the supervention of a much more formidable malady; and if we neglect it in the adult, we shall finally encounter a fixed and incurable deformity, destructive alike to the beauty of the form, and the moral com-

fort of our patient. It is not possible to form a system of prophylactic measures against the disease in the younger class, as its causes are not yet ascertained. For the other class, the preventives have been already laid down. When the *lateral* curve becomes perceptible, and announces the existence of disease of the spine and its braces, it is highly important to meet the case promptly. As there has arisen an inability to support the erect posture, and as the course of invigoration necessarily demands time, we must, to avoid the effect of habitual flexure, either lend extrinsic support, or lay the patient in a recumbent posture. There lie objections to both measures. Artificial support disposes the muscles to rely on it; and even the ligaments, when disused, lose their tone and tension. A great and continued prop of any kind, tends, therefore, to increase that condition of the spine, on which the deformity is dependent, and is so far objectionable. It would, if alone relied on, be productive of very injurious consequences, and tend rather to augment the disease than promote a cure. But if applied only as a temporary support, while all promising measures for enforcing tone and enhancing vigour are employed, and if laid aside gradually, as the spinal column acquires self-supporting power,—mechanical contrivances form an invaluable auxiliary in the management of such cases, whatever may be their causes, and at whatever age they may occur. If detected *in its very origin*, lateral curvature demands no such aid; for the patient has yet the power of erecting herself by volition; and the instantaneous removal of existing causes, and the application of corroborating remedies, will suffice for the cure. When volition is incompetent to erect the spine, the danger of habitual incurvation becomes at once apparent, and must be guarded against by such a suspensory power, as will correct the inclination. It is equally necessary to use mechanical measures to overcome the *twisting* of the spine, by which one shoulder is advanced before the other. As well might we, when a sapling is bent, attempt, by digging at its roots and watering it, to make it stand erect, as to remove a decided deformity of the spine, by invigorating its muscles and ligaments. If soon reinforced, these braces may *suspend the progress* of the inclination; but, as invigoration is slowly accomplished, and the very curve is a cause of weakness, we must resort to external mechanical correctives, to keep the

spine straight, until its own braces are adequate to its vertical support. For such a purpose, the instruments are almost numberless. Those which I prefer, are delineated in Mr. SHAW's excellent work, and in my paper in the first number of this Journal.

To the treatment by continued recumbency, the objections are much more weighty. Increased tone and vigour can scarcely be expected from a course of management, of which exercise forms no part; and we have the high authority of Mr. SHAW for the assertion, that confinement in a recumbent posture, while it denies all hope of general invigoration, softens the intervertebral substance, and produces a degeneracy of the structure and functions of the spine. It does more: it often places the patient in a posture as crooked as possible. It is so difficult to keep a patient straight in bed, that the highest authority suggests the application of steel-lined corsets at *bed-time*. As there is seldom, in such cases, much pain or sensible irritation, it is difficult to perceive the advantages promised by recumbency. It does not, even temporarily, correct the incurvation. It has no tendency to augment tone and vigour. It impairs digestion, enfeebles the muscles, relaxes the ligaments, and produces degeneration of the spine. In the few cases of lateral curvature, where exercise causes pain, its occasional application may be necessary; but I have seen no case in which it could not be dispensed with. When I say dispensed with, I mean as a leading measure in the process of cure; for patients, affected with lateral incurvation of the spine, should repose on an inclined plane, as advised by Mr. SHAW, during the greater portion of the time which is not spent in exercise. Exercise should be taken regularly, and for an adequate period of every day; but the patient should be always properly sustained by mechanical aid, while in an upright posture. In very young subjects, the spine-cart, spine-chair, &c. may be employed with advantage during the whole period of exertion; but in others, corsets, lined with slender steel, or whalebone plates, may frequently suffice to support the spine during a part of each day; taking care, however, not to bind down too tightly the muscles which are to be invigorated by exercise.

To prevent the patient from assuming a crooked posture in bed, it has been recommended to apply the steel-lined corsets during the hours of repose. This practice may, at first view, appear

inconsistent with the objections often urged against the use of corsets; but if at all admissible in the treatment of this disease, corsets are most usefully applied, when the patient is in bed. When in an erect posture, the support of the corset is hurtful; because the muscles which usually brace the spine are not called into exercise, and the patient leans upon the extraneous support. But in bed, all the spinal braces are relaxed, and the corsets merely prevent the assumption of a crooked attitude. They may be thrown aside in the morning; or if essential to the maintenance of a proper erectness, may be worn for such part of the day, as is not spent in the spine-cart, or some instrument of that class.

Having devised the means of immediately reducing the curvature, it next becomes the duty of the physician to obviate the causes, and to remove the effects of the disease of the spine.

The remote or predisposing cause, is often, in young subjects, what is usually termed, a scrofulous temperament. A fair and fine skin, light hair and eyes, large lymphatic glands, soft, yet large limbs, a tongue partially divested of its *epithelion*, a tumid abdomen, &c., characterize the children most liable to the disease. They are sanguine, irritable, and timid; and, therefore, predisposed to cephalic diseases, and frequently die of hydrocephalus. When lateral curvature of the spine affects them, it makes its onset very early in life; often in the second year, and seldom after the fourth. It also usually attacks male subjects, though there are many female cases. Looking at the state of the system in such cases, the *general* treatment cannot be easily missed. The want of tone and vigour is every where visible. The digestion is feeble and irregular; the muscles are soft and flabby; the lymphatic system predominates, and the nerves are particularly excitable. The constitution is defective in vigour, and calls for a course of bracing remedies. Good air; cold bathing, especially in salt water, or salted lime-water; a regulated nutritious diet; regular purging; frictions and champfooing, and moderate, but frequent exercise,—constitute the chief part of the general management of such cases. It seems scarcely necessary to suggest the propriety of securing the child against great mental inquietude, and severe moral exercise of every kind.

But general treatment will not alone suffice for a cure in all cases; remedies must be applied to the local disease. To use

them with advantage, we should have clear views of the condition of the spinal column; but unfortunately there yet exists but little settled knowledge on this subject. There are nearly as many hypotheses as there are writers. One ascribes the curve to the irregular action of enfeebled muscles; another to relaxation of the spinal ligaments; a third, to a change of character in the intervertebral cartilages; a fourth, to mere errors in posture combined with general atony; and a fifth, to a disordered state of the *medulla spinalis*. There are also those who attribute the incurvation to irregular deposition and absorption of osseous matter in the bodies of the vertebræ, by which these bones are so changed in form, as to cause the lateral bending and even twisting of the spine. As each has demonstrated by cases the truth of his theory, we are inclined to believe that each is right in all that he affirms, and wrong in all that he denies. In fact, in most *juvenile* cases of curved spine of some standing, the muscles are atonic, the ligaments relaxed, the intervertebral cartilages softened, and, in protracted affections, even the form of the vertebræ is altered. In such cases, little influence is exerted by errors of posture; as very young children are not subjected to much restraint either at the school-desk, or by means of corsets. It is probable, that, partaking of the general debility, and of the redundant liquidity of the system, the muscles and ligaments of the spine feel the earliest influence of the local disease. For the same reason, the intervertebral cartilages cannot be very long exempted from participation in the morbid action of the part. Finally, the pressure and tension on the vertebræ cause a gradual change, and they are found at length to assume a cuneiform shape. Chiefly to prevent the latter organic change, and to arrest the elongation of soft and stretched ligaments, would I insist on the early and patient application of supporters to the spine. While they are applied, the spine and appendages must be strengthened by frictions, champfooing, and those motions which call into play the muscles of the trunk. Occasionally dry cupping will promote action, and assist in the recovery of tone; and when the irritation near the spine amounts to pain, scarifications are beneficial. When the pain occurs as a consequence of fatigue, Dr. JARROLD's application, a sponge soaked in warm water, is very soothing and agreeable. Although I have not tried electricity, I am led to

suppose that it would be useful, as it often promotes vigour, and relieves irritation in other cases.

Unfortunately we do not often see a case of lateral curvature in a young child, until the disease is inveterate, and the patient threatened with paralysis of the lower extremities. Then, when the spinal marrow is involved, and changes in structure have taken place in the column itself, we are summoned to give late and almost hopeless attendance. Nay, we are not always applied to before the morbid spine has become carious, and antero-posterior incurvation, with its deformity and agony, is added to the accumulation of malady. When caries takes place, and it often supervenes in very young subjects on lateral incurvity, we are required to give consideration to the long established treatment by issue and seton, and the more recent one by blisters, pustulation, and moxa. That by such means, irritation and inflammation may be reduced and even removed, cannot be questioned; and that some cases of caries of the vertebræ have been thus cured, is a truth supported by high authority. But the long and tedious confinement which accompanies such treatment, and the severe pain and great trouble by which it is attended, deter from its frequent and patient application. It not unfrequently causes hectic fever, and its train of evils; and it tends, by confinement and inaction, to augment the disease of the intervertebral cartilages, and the softness of the ligaments. It promises, at least, only to arrest the progress of caries, but does not pretend to lessen the existing deformity. Besides, to succeed at all, it must be persisted in for years, and in some cases almost for a lifetime. If then a cure can be effected by milder means, and in less time, they must be preferred. But when milder measures promise melioration of figure, as well as the arrest of the disease, we can scarcely hesitate to give them a trial. In a conversation with Dr. Physick, held this very day, he informed me, that he considered rest, recumbency, and long continued regular purging, as the means most to be relied on, in the treatment of carious vertebræ. Several cases of this formidable disease were thus cured by him, at an early period of his professional career; and more recently, he has been successful in the application of the same means. Viewing, as he does, caries of the vertebræ, and hip disease, as dependent on the same causes, he was led to the adop-

tion of a common treatment for both; and he has not been disappointed in the result. In those cases, which are not meliorated under such treatment, especially after a patient trial, this great surgeon lends his sanction to the application of issues, and other local remedies of the same kind. That such treatment will cure the disease, cannot be doubted; because we know some of the individuals who have been thus relieved, and the authority is unquestionable. That a rigid adherence to a recumbent posture, with total privation of exercise, did no injury to the spine and joints, the occurrence of which is so strongly insisted on by Mr. SHAW, may be ascribed, in part at least, to the regular use of cathartics. As, however, such a confinement is exceedingly irksome to children, and must, in some degree, impair the general vigour, it is important to ascertain whether as speedy and certain a cure is not compatible with less restraint. Some of the following cases will prove, that such restraint is not always necessary, and that, in many carious affections of the spine, exercise, with all its advantages, may be enjoyed without lessening the probability of restoration to health. It will also be perceived, that relief from pain is often greater during the use of the spine-cart, than during recumbency and total inaction. Finally, as in many of the cases, lateral curvature is complicated with caries, the suspensory treatment assumes greater importance and promises better results.

Cases of lateral incurvity in girls approaching the age of puberty.—For reasons obvious to delicate minds, the initials of the names of the girls, and a minute history of the cases, cannot be given. Six of the cases have been subjected more or less completely to the treatment recommended. They were all cases of some duration, presenting a degree of disfiguration, insusceptible of farther concealment. In all, there was an ungraceful advancement and elevation of one shoulder, and an unnatural projection of one scapula, while a very conspicuous deviation from its usual appearance was perceptible in one collar bone. In all these cases, the treatment suggested in a former part of this essay was applied; and in all, save one, there has resulted a considerable improvement of the figure. One case has defeated all such measures, and, after a laborious application of the best means of cure, remains yet unchanged. In none of these cases has the figure

been restored to its natural state; though in some, the remaining deformity is readily concealed by the clothes.

Cases of curvature in young children.—In most of the cases of this class, there existed both kinds of incurvation; the order of accession being such as to give precedency to the lateral.

Among those whose cases of this class were described in a previous paper, already referred to, A. S. continues well, and possesses still an erect and handsome figure, and has not used his spine-cart for many months. E. C. who was thought to be nearly cured, has experienced some increase of the antero-posterior curve; and the disease is, perhaps, yet making a very slow but certain progress. J. H. recovered so far as to be able to attend at school, and to engage in the gambols of his little play-fellows. His caries appeared to have ceased its action: but during the last month he was affected with pain in the head; and after a few days' illness, died apparently of *hydrocephalus internus*. In his last illness he never complained of his back. No opportunity of making a *post mortem* examination was afforded. The other cases, the histories of which were given in that paper, remain yet in health.

Case 1st. Earle Carson, four years of age, was shown to me on the 29th of October, 1826. He was then confined to a recumbent posture, in consequence of the loss of the use of his lower limbs. As the legs were often rigid, he was frequently deprived of the power of sitting erect—a posture rendered painful to him in consequence of a disease of the spine, by which an angular projection was caused near the upper section of the dorsal vertebræ.

As in the case of A. S. the occiput rested on the back, so as to render it difficult to pass the finger between them. The usual irregularity was presented by the ribs and sternum. Disturbed often during the night, by severe pain in the back, and under the epigastric region, the little patient was denied the relief usually obtained by change of posture; for he suffered more keenly by being moved. His external appearance was that which indicates the lymphatic temperament, and he presented all the ordinary symptoms of diseases of this class. His skin was rough, though fine, his bowels were costive, his breath was fetid, his mind active and sensitive, and he had a frequent, irregular, forceless pulse. Sometimes he experienced hectic paroxysms. The

treatment was founded on the indications. The curvature was lessened by mechanical means adapted to his helpless state; cathartics regularly given, restored the vigour of intestinal action; and the bath of lime-water and salt was corrective of the diseased state of the cutaneous organ. Under such treatment, he passed from a condition of extreme attenuation, to one of ruddy plumpness. His appetite and digestion became excellent; his pain annoyed him no more; he bore even rough handling well; and while his *neck* displayed no longer an unnatural curve, his legs, becoming gradually obedient to volition, served, though yet imperfectly, to impel his spine-cart. He, in fine, appeared to be in good health.

As a proof of the advantage of suspension, I ought to mention, that when the child was in a state of progressive improvement, his grandfather lowered the head piece, so as to relax the chin-band; in consequence of which the legs were again in a few days paralyzed. By increasing the degree of suspension, the limbs were soon restored to use.

About six months after the commencement of the medical management of this case, the child began to complain of severe pain *in the head*, and in a few days died. A *post mortem* examination showed the marks of inflammation and effusion in the brain. The spine was found carious at the angular projection, and the bodies of three dorsal vertebræ were gone. A light yellow consistent caseous matter occupied their place. The interosseous cartilages were softened, and here and there exhibited reddish spots, as if inflammation had existed on their surface.

Case 2nd, presented a condition of spine, which appeared to me so hopeless, as to induce me to advise against any treatment. The daughter of a respectable tobacconist, Mr. A. in Second street, was, by a long course of disease of the spine, greatly deformed. Indeed, the hump on the back was nearly as great as is seen in any case, and the gastric pain was so severe as to destroy the comfort of the patient. At the earnest and repeated solicitation of the parents, I was induced to use appropriate measures, and to my own surprise, found the general health susceptible of complete restoration, and the deformity capable of marked improvement.

Case 3rd, was brought to me from New York. A child of

wealthy and affectionate parents, this little girl had been placed under the care of the most eminent physicians, and subjected to the full influence of the most approved practice; but the deformity continued to increase, until the figure was entirely destroyed, and the general health undermined. Frequently, she was confined because of the weakness of her limbs. The symptoms were very similar to those of the preceding cases, and the treatment was, of course, nearly the same. Contrary to expectation, improvement was manifest, from the time of the use of the spine-cart, the bath, and cathartics. Her general health has become excellent, and she is so much improved in figure, as to lead her father to express, in his last letter, a confident hope of the attainment of a perfect cure.

To detail all the cases of this kind, would be tedious and useless. It may be said in general, that in no one case, where the child would submit, and the parents were resolute and patient, has the disease destroyed the patient. The greater number have been under progressive improvement, some remain stationary, and in a few, the disease, though retarded, is advancing in its course.

Among the carious cases advantageously subjected to the proposed treatment are, that of a son of Dr. T. of N——n, a child of Mr. M., Second street near Race, and several others. The following case was communicated to me by Dr. HARRINGTON.

Curvature of the Spine.—History of a Case, by W. H. HARRINGTON, M. D.

On the 1st of May, 1826, I was requested to attend F. R., a boy 6 years old, who was affected with a lateral or serpentine curvature of the spine.

Over the upper vertebra of the loins, there was a painful tumefaction of the muscles, under which could be felt a considerable angular prominence of the bone.

The sternum, and anterior part of the ribs, projected forwards.

The child experienced great fatigue from little exercise; was frequently roused from sleep by painful twitchings of the lower extremities; and during the day, sought relief from pain and exhaustion, in the lap of his nurse, or over the seat of a chair.

His tongue was thickly coated with a moist yellowish fur. His pulse was quick; his skin covered with a scaly eruption; his ab-

domen very hard and protuberant; his appetite depraved, and his bowels were costive. He often complained of pain in the breast, difficult respiration, and palpitations. He stumbled when he attempted to walk alone, and drew his legs up and crossed them, when in a sitting posture. I thought the practice recommended by Dr. J. K. MITCHELL suited to this case, and accordingly directed the daily exhibition of a cathartic, composed of one part of jalap, and two parts of cream of tartar; a shower bath of lime-water, in which a small portion of common table salt was dissolved, and a nutritious diet.

At the end of two weeks, the tone of his system was evidently improved; his strength increased, and his appetite was restored to its natural condition. At this period, the spine-cart was obtained, in which the patient was placed four times a day, and directed to remain there, an hour at each time. At every visit, and the visits were made with considerable intervals, I elevated the rod a little. In a few weeks, I observed that he carried his head more erect, and walked with less difficulty, and apparently with more confidence. The curve became less and less apparent; the tenderness and swelling in the neighbourhood of the loins gradually diminished; and all the other unfavourable symptoms presented a milder character, until the beginning of September, when, in consequence of the cure appearing complete, I discontinued my visits.

December 20th, 1826.—On this day, I visited my patient, and found him perfectly recovered, and able to attend to his juvenile sports, with his wonted vigour and strength; and one of the swiftest pedestrians of his age in the neighbourhood.

February 8th, 1827.

In concluding, I should be wanting in a sense of public duty, did I not confess, that in the application of the remedies insisted on in this essay, I have met with many difficulties, not anticipated when I wrote my first paper.

The confinement to the spine-cart has been found much more irksome, than, from its effects in the earliest cases, I had reason to expect.

I have been obliged, in many cases, to substitute rhubarb, and other cathartics, for the usual purgative; and I have found great difficulty in sustaining the patience and resolution of the parents

during a confining and irksome treatment, necessarily of long continuance. But the most formidable objection is afforded by the suspicion, that the cure of a scrofulous natural issue of the spine, to which the system has been long accustomed, creates an increased disposition to disease of the brain, and will demand the use of artificial issues, when we are on the eve of a cure. Those, however, who have encountered in practice many instances of this formidable malady, will admit, that the success attending the treatment which is founded on the symptoms, is, if not always successful, at least more salutary than any other.

ARTICLE VII.—*A Case of Dislocation at the Sacro-Iliac Symphysis.* By THOMAS HARRIS, M. D. Surgeon of the U. S. Naval Hospital at Philadelphia.

Mrs. ———, the subject of this case, is thirty-five years of age, of a slender and delicate form, and the mother of a child, which at the time of the accident was two years old. On the 27th of January, 1827, she received a violent blow on her sacrum, inflicted by her husband with his clinched fist. She immediately fell, and was unable to rise. Severe pain was felt about the right sacro-iliac junction, accompanied with nausea and faintness.

Dr. GIBSON, professor of surgery in the University of Pennsylvania, was consulted a few hours after the occurrence of the accident. Upon examination he found a considerable hollow over the upper part of the sacrum, produced by the unnatural backward projection of the posterior superior spinous process of the ilium. When the patient moved her right leg, an aggravation of the pain was experienced, accompanied by a distinct crepitation. The slightest motion conveyed an impression to her, as if, to use her own language, her "hip bones were separating." These symptoms satisfied Dr. GIBSON that a dislocation, or *diastasis* of the sacro-iliac symphysis had taken place. The patient was bled, and directed to take an anodyne draught, and a soap plaster was applied over the injury.

Jan. 28th. Passed a restless night—pain continues acute, and a burning sensation is felt in the site of the dislocation. Her bladder and intestines continue to perform their natural functions; thus

affording satisfactory evidence, that no material mischief has been done to the spinal marrow.

In consequence of professor GIBSON's numerous engagements, he was unable to continue his visits to the patient, particularly as she lived at an inconvenient distance. He, therefore, very kindly placed the case under my charge.

Feb. 1*st.* In addition to the symptoms already detailed, I find, upon lifting up the soap plaster, a considerable ecchymosis over the injured articulation.

Feb. 3*rd.* Complains of creeping rigors, which extend from the lower part of the sacrum to the middle of the dorsal vertebræ. The slightest motion produces a recurrence of the chills, and an aggravation of the pain. While, however, the patient continues to lie on her left side in a state of perfect quietude, her sufferings are much less severe than they were during the first four days: any other position occasions great pain. No material alteration in the symptoms was observed until

Feb. 10*th.* Experiences acute lancinating pain about the right sacro-iliac junction, accompanied with some fever and restlessness. The partial rigors are less frequent. A dose of oleum ricini was prescribed, which operated freely, and procured relief from the pain and fever.

Feb. 12*th.* No fever, and while perfectly quiet, exempt from pain. Applied a roller around the pelvis, which affords her, as she states, comfortable sensations.

Feb. 14*th.* Patient complains that the bandage around the pelvis excites uneasiness. It was in consequence removed, and a fresh soap plaster applied.

Feb. 16*th.* Severe pain is felt in the right knee, similar to that which arises sympathetically from diseased hip joint. The chilly sensation in the course of the spine, has not been felt since yesterday morning.

Feb. 20*th.* Pain continues in the knee, but in other respects more comfortable. Accidentally moved her right leg this morning, but without producing crepitation, or much pain.

Feb. 25*th.* No pain is felt in the knee, and the patient says she feels in every respect much relieved. Applied a padded and quilted girdle around the pelvis, which was secured by a lacing cord. She is now allowed to indulge in her ordinary diet.

March 8th. An attempt was made to-day to raise the patient in bed; but, as it produced an aching sensation in the injured part, she was immediately replaced in her former position.

March 14th. Perfectly free from pain. Another attempt was made to raise the shoulders in bed, which produced less inconvenience. Remained in this situation twenty minutes, when she complained of fatigue.

March 16th. Was again raised in bed, and continued in this situation for half an hour without suffering much uneasiness. From this date, she was raised every day to a semi-recumbent position, and so continued during the space of an hour, until

March 30th. Was lifted to-day from bed, but, in consequence in part at least of the debility of her muscles, was unable to stand. Directed that she should be placed every day in a cushioned arm chair.

April 10th. With a little assistance, stood to-day for three or four minutes.

April 15th. Aided by a cane, she walked from the chair to the bed.

April 20th. Walked across the room without any assistance, but with some difficulty.

April 27th. Walking considerably improved. The patient now feels but little inconvenience from the injury.

May 4th. Walked down and up stairs. The posterior projection of the ilium, and the corresponding depression of the sacrum, are still very apparent. The latter bone appears to have been forced inwards about half an inch. The great breadth of this articulation, or synchondrosis, will allow of a displacement to this extent; and still there will remain opposed to each other, surfaces of sufficient width to sustain, when properly united, the weight of the body.

Considering the firmness of the union between the sacrum and ilium, supported as it is by powerful ligaments, it would seem almost impossible, that a blow with the fist could separate them. It may be well to state, however, that the individual who inflicted the injury, possessed great muscular strength, that the patient was delicately formed, and that, in this particular case, there may have been an unnatural weakness of the articulation. Whether this local weakness had always existed, or whether it had been

superinduced during some particular derangement of the system, is altogether a matter of conjecture.

That relaxation, and even partial separation of the pelvic articulations do sometimes take place during pregnancy, is fully established by the testimony of AMBROSE PARE, PETIT, L'HERETIER, BOYER, and others. Their opinions upon this point are not the result of speculations, but founded upon satisfactory post mortem examinations. In some instances, these bones were re-united, and in others, they continued separated, and the unfortunate patient was, in consequence, bed-ridden for life.

If the reports of these distinguished surgeons be correct, it will not be unreasonable to suppose, that our patient may have experienced during her last, and only pregnancy, this partial relaxation of the sacro-iliac symphysis, which may have been increased by the severe and protracted accouchement, which she reports herself to have then experienced. Though a considerable time had elapsed from the period of her delivery to the occurrence of the accident, still it may not have been sufficient to restore the synchondrosis to its original strength. It is only by admitting this supposition, that we can account for the production of an injury, by means apparently so inadequate.

This is so rare an accident, that some surgeons have doubted the possibility of its occurrence under any circumstances, unless in connexion with fracture of the pelvis, or concussion of the spinal marrow. The degree of external violence required to produce such an effect, does at the same time so much injury to the spinal chord, and pelvic viscera, as to render the dislocation the most simple part of the case. When the accident is thus complicated, it always sooner or later terminates fatally. Cases of this character are recorded by BOYER, ASTLEY COOPER, and others.

The only case of *simple* dislocation of the sacro-iliac synchondrosis which I have been able to find, besides the one now recorded, was reported by ENEAUX, HOIN, and professor CHAUSSIER, and published in the *Recueil des Memoires de l'Academie des Sciences de Dijon*. As I have not at present access to this work, I will subjoin the following extract from their report, which may be found in the 4th Vol. of Boyer's Surgery.

"The left os innominatum was dislocated and displaced upwards

The inflammatory condition of the part forbade all attempts at reduction. After using for several days relaxing applications, and an antiphlogistic regimen, an attempt was made to replace the bones, which was opposed by a recurrence of the pain, and followed by a return of the inflammatory symptoms. After some days, we renewed the attempt at reduction, but with the same result, when it was determined to renounce all further efforts. After a prolonged rest, but shorter than could have been desired, the patient left his bed; and having commenced walking with the assistance of crutches, the weight of the limb corresponding with the injured side, drew the displaced ilium downwards, and thus gradually effected a reduction. The patient ultimately recovered, and was enabled to resume his employment as a bricklayer."

It is not stated, either in what manner the accident occurred, or what length of time was required to accomplish the restoration.

ARTICLE VIII.—*Case of Twins, carried to the full period, in which one Fœtus perished at the end probably of the fifth month of Utero-gestation.* Communicated, in a letter to the Editors, by O. H. TAYLOR, M. D.

THE following case of twins, interesting principally from its singularity, may, perhaps, be perused with satisfaction, by some of the readers of your valuable Journal.

On the 10th of March last, I was requested to attend Mrs. B., a woman of small stature, aged twenty-three years, in labour with her first child. She had been suffering with slight and irregular pains for two or three days anterior to my visit. At the time I saw her, the pains had somewhat increased; but they still recurred at irregular intervals, and made very little impression upon the os uteri. She expressed great anxiety at not having felt the motion of the child for ten days or two weeks. Under these circumstances, I took my leave, after having assured her, that I would see her again in a short time. Four hours and a half elapsed before I paid my next visit, when I learnt that the membranes had been ruptured but a few minutes before. Upon examination, the arm, somewhat swollen, was discovered to protrude without

the os externum. In order to promote the dilatation of the os uteri, which was very rigid, I ventured to bleed the patient ad deliquium animi. This having the desired effect, I deemed it expedient immediately to turn the child, and deliver by the feet. On passing my hand into the uterus to search for the feet, it came in contact with a substance, the nature of which I was unable to determine. I, however, found no difficulty in moving it to one side, and delivering by the feet. Judging from its size, the child could not have weighed less than nine or ten pounds. It was still-born, and, from the abrasion of the cuticle and other signs of putrescence, appeared to have been dead for several days. Having separated the child from the mother, I next proceeded to ascertain the nature of the substance, which had opposed me whilst engaged in the operation of turning. Accordingly, I introduced my hand again into the uterus, and extracted, without difficulty, the body in question, which proved to be another fœtus of much smaller size. From the appearances presented by this fœtus, I was led to suppose, that it had been forcibly compressed between the sides of the uterus and the full grown fœtus. The head, chest, and abdomen were perfectly flat, and their cavities, as it were, entirely obliterated. Its size indicated it to be a fœtus at the end of the fifth month of utero-gestation. It showed none of the ordinary signs of putrefaction, though the cuticle could every where be readily separated from the surface of the body. It was furnished with a very small umbilical cord, which was accidentally broken. In the delivery of the after-birth, very considerable difficulty was experienced, on account of an hour-glass contraction of the uterus; in consequence of which, Dr. Eberle was called in for his advice and assistance.

The size of the smaller fœtus, as accurately measured, is as follows: The distance from the chin to the vertex, in its flattened and compressed state, is one inch and four-tenths. The breadth across the shoulders, from the acromion process of one side, to that of the other, one inch and three-tenths. From the top of the shoulder to the joint of the wrist, one inch and six-tenths. The length of the leg, from the trochanter to the heel, one inch and six-tenths. The whole length of the fœtus, five inches and seven-tenths. Its weight, as taken out of the alcohol, 230 grains.

This singular example of the retention, within the uterus, of a fœtus, which must have perished at the end of the fifth month of the pregnancy, is certainly interesting to the physiologist and accoucheur. We know not what became of its membranes or placenta, and have no account of the occurrence of hæmorrhage during the term of utero-gestation.—*Ed.*

ARTICLE IX.—*Case of Epilepsy, attended with peculiar circumstances, in which the Ligature of the Carotid Artery was resorted to with partial success.* Communicated, in a letter to the Editors, by FREDERICK E. BECTON, M. D. of Rutherford County, Tennessee.

JOHN HOOBRY, a Dutchman, twenty-two years old, of stout athletic frame, large head, and short neck, applied to me in February last, to be relieved of epilepsy. He had been subject to it for more than nine years; the attacks of the disease only occurring during sleep. He had taken all the usual remedies; such as foxglove, zinc, nitrate of silver, turpentine, &c. &c., not omitting copious draughts of the famous misletoe tea; but none of them, either separately or combined, ever afforded him one night's respite from his fits.

On the 15th of March, I saw him for the first time; and when I heard the history of his case, I became satisfied that medicine could afford him no relief. I suggested to Mr. Hoobry and his friends, the possibility of his being cured by a surgical operation. He had not received any injury on the head, and, therefore, trepanning was not thought of. I proposed tying the carotid artery, believing that his fits were produced by a collection of blood in the encephalon, too great for the return vessels to conduct to the heart. I was confirmed in this view of the case, from the fact of his not being liable to them, except when sleeping, and consequently in a horizontal posture; which position favoured the propelling arteries, but lessened the returning power of the veins. I also reflected, that he had been treated by the ordinary methods for nine years, without receiving any benefit; and, that every night, during that interval, he had suffered from a paroxysm of the disease. Under these circumstances, I did not hesitate to propose the operation above referred to; supposing, that by means of it, the force of the blood to the head would be diminished, whilst the returning power of the veins would remain as

before. I, accordingly, (my views being acceded to by the friends of the patient,) on the 21st of March, in presence of Mr. P. H. Mitchell, a pupil of mine, and Messrs. Yandell, Wasson, and Simmons, also medical students, tied the left carotid artery, below the bifurcation. It was done, as directed by Mr. C. Bell in his Operative Surgery. The only inconveniences experienced by the patient, were such as would a priori be expected: to wit, an unwillingness to speak, and a painful sensation on swallowing, both the result of soreness from the swelling which occurred.

The last time I visited him, was on the eighth day after the operation, he being about ten miles distant from my residence. At that time the wound was nearly healed; and from the day of the operation, until ten days and nights had elapsed, he had experienced but two fits. Being elated at the prospect of a cure, and yielding to the cravings, created by a natural fondness for spirituous liquors, he has since given himself up to intemperance, and has had frequent fits. In consequence of conduct so reprehensible, I gave him no further attention.

If this operation has ever been performed for the cure of epilepsy, before the present instance, it has not come to my knowledge. Whether, from the circumstances of the case already mentioned, I was justifiable in undertaking so bold and dangerous an operation, may be questioned by some; but I hold it as a maxim not to be neglected, that he who shrinks from what seems to be his duty, electing rather his reputation, than a prospect of relieving afflicted mankind, scarcely merits the honourable appellation of doctor of medicine.

Whether the degree of relief afforded the unfortunate man, until he forgot both himself and me, was such as to justify others in performing this operation for the disease in question, when occurring under the same circumstances, I will not pretend to decide; but if another case should present itself in my practice, exhibiting similar symptoms, and in an individual by whom admonition will be regarded, I shall certainly give it another trial.

EDITORIAL REMARKS.

With much pleasure we publish the above case from our respected correspondent, as indicative of his professional zeal, and

as important in a pathological and practical point of view. The power, however, of the operation, in preventing the return of the epileptic convulsions, must have been greatly assisted, in the present instance, by the regimen to which the patient was submitted. Spirituous liquors, the apparent cause of his disease, were simultaneously interdicted, and when resumed, again excited the epileptic paroxysm. It cannot be denied, however, that tying the carotid had here a decided influence, as well from the circumstances narrated, as from the numerous facts, now collected, on the immediate consequences of obstructing the flow of blood in this vessel in many cephalic irritations. To the late Dr. Caleb Hillier Parry, we are indebted for many interesting and valuable facts of this character. He believed that hysteria, epilepsy, and various other reputed *nervous* diseases, whatever might be their essential characters, depended on the impetus or momentum of the blood in the cerebral vessels; and hence, that measures to diminish that impetus, were decidedly preferable to the whole course of antispasmodic, tonic, and stimulating remedies, then and now so freely recommended. In all these affections, Dr. Parry resorted with success to *pressure on one or both carotid arteries.* In this way, he has, for the time, arrested the pulsatile pain, and the rush of blood often felt in the head, relieved severe pain, removed a sense of weight and fulness of the head, with flushing of the face, and moderated hæmorrhage from the nose; and, when sleep has been prevented by a hurry of spirits, and quick transition of thought, accompanied by an accelerated cerebral circulation, he has in himself "a hundred times removed these affections, and induced calm sleep by strongly compressing one carotid artery."* By the same means, he has removed various nervous complaints of the head, hysteric and *epileptic convulsions.*† The operation of tying the carotid artery for aneurisms of this vessel, or its branches, accompanied with pain or uneasy sensations, has often permanently relieved these symptoms, depending on increased vascular impetus.‡ These, and similar facts certainly prove, that cerebral

* Posthum. Med. Writings, vol. i. 324. London, 1825.

† Elements of Pathology and Therapeutics, 2nd edit. p. 251. Aphorism, DCCXXIX.

‡ Medico Chirurg. Trans. vol. i. two cases by A. Cooper: also vol. ii., a case of aneurism from anastomosis in the orbit of the eye, by Travers.

irritations are often accompanied and kept up by increased vascular momentum, and that they may be sometimes relieved by mechanically lessening that impulse. But will any permanent benefit result from tying the carotid artery in epilepsy? Without wishing unduly to discourage such operations, the propriety of which repeated experiments can alone decide, we would maintain the negative, for the following reasons:—

1*st.* That surgical experience has shown, that no permanent effect is produced on the circulation of blood in a limb, or even in the head, by tying the largest arteries supplying these parts.

2*nd.* That acknowledging with BICHAT, the independent, or at least the almost independent action of the capillary vessels, the velocity and quantity of blood through the unobstructed channels will be so increased, that there will be no diminution in the supply of this fluid—an opinion maintained by TRAVERS, and also by PARRY, although the *impetus* of the blood in some of the cerebral vessels may be lessened.

3*rd.* That from a careful examination of the symptoms, causes, and the post mortem appearances which often manifest little or no change of structure, after the disease has existed even for many years, and after attention to the effects of the several opposing plans of treatment, we are inclined to the opinion, that epilepsy is primarily and essentially dependent on an altered state of the nervous apparatus; and that vascular excitement, or impetus, is merely an *exciting* cause of the paroxysm, which may be, and often is, induced by any other irritating cause; and, consequently, that by removing the increased momentum of blood, if this could be permanently effected, we would but remove one of many sources of irritation.

To arrive, therefore, at a just pathology of epilepsy, we must investigate the normal or healthy condition of the cerebro-spinal apparatus, and then study the changes which may be induced in this system by the influence of different agents; for we hold, that no two agents, under similar circumstances, will produce precisely the same effects on the same tissue.

ANALYTICAL REVIEWS.

ARTICLE X.—*An Elementary System of Physiology.* By JOHN BOSTOCK, M. D. London, 1826, pp. 643, 8vo. Vol. 2nd.

Dr. BOSTOCK has been long so advantageously known by his various contributions to physiological science, that we have no occasion to conciliate the good will of our readers to this great achievement in that valuable department of knowledge. To read is to admire the skill, candour, and industry, which have been combined to produce a body of physiology, suited to the present enlightened period of the world; and containing, as well, a succinct and lucid detail of the physiological histories, and theories, of times long gone by, as a fair exposition of the opposite sentiments which are still held by different parties, and the stubborn facts which all parties equally concur in admitting to be demonstrated.

We have taken up the 2nd volume in this article, not only because we could not possibly comprise, in a short space, any useful view of the immense variety of details, scattered through more than 1000 pages, full of knowledge and wisdom; but also, because the first has been before our brethren since 1824, and has even been republished at Boston, so that it could be obtained by those who desired to have it.

The value of the present volume, is, in respect to the execution, at least equal to the former, and as far as depends on the numerous references, and notes, superior; for these are more full, and more numerous. With regard to the topics, we do not conceive that they can be so engaging as those of the former volume, in which the sentiments of the most distinguished medical philosophers, upon contractility, sensibility, and the circulation of the blood, are portrayed with masterly skill, and ability; these being, perhaps, the great foundations, on which all physiological superstructure must necessarily be raised.

The present volume commences with chapter VII, on Respiration, and proceeds to treat in chapter VIII, of Animal Tem-

perature, IX, of Secretion, X, of Digestion, and XI, of Absorption, which closes the volume; soon, we are promised, to be succeeded by a third.

Inasmuch as the 7th chapter alone comprises 241 pages, much of it printed in a small type, our readers can only expect us to present them with a portion of it; and in order to facilitate the condensation, we shall frequently be compelled to take only portions of paragraphs, or sentences, and shall, therefore, not oblige ourselves to mark any but considerable and connected passages, as quotations; there being no occasion to fetter ourselves by this method, which would prevent us from paying that real respect to the author, which we feel must in all cases be best paid, by laying before the public the largest possible amount of his valuable work.

With the above explanations, we proceed to say, that the author commences with an account of the mechanism of respiration, and gives a description of the trachea, with its ramifications; the pulmonary system of blood vessels, and the diaphragm. The mechanical act of respiration consists essentially in flattening the arch of the diaphragm; for, the slight increase of capacity which the thorax could acquire by raising up the ribs, can be of very little importance in the act. He supposes, therefore, that the function of the intercostal muscles, which has been so much discussed, consists in fixing the ribs firmly, so that they may not be drawn downwards by the action of the diaphragm. We would beg leave to object to this explanation of Dr. Bostock, that the diaphragm, being inserted into the lower rim of the bony thorax, could have no tendency to draw the ribs downwards. Suppose the axis of the chest to pass through the centre of the diaphragm, it is evident that the direction of the contractile efforts is upwards, and would strike the axis, where it perforates the muscles, at various angles of from 25 to 40 degrees. We see not then how it could draw the ribs downwards, unless the concavity were reversed, or made to look upwards.

The lungs are every where in contact with the cavity containing them; whence it follows, that when the capacity of the thorax is increased by flattening the diaphragm, the air in the lungs must become rarified, and a portion of external air, sufficient to restore the equilibrium, will enter the trachea, and pass down into the

vesicles. This constitutes the active portion of respiration; for that by which the air is afterwards expelled is merely passive, and dependent on elastic powers; except in extraordinary states, wherein the abdominal muscles concur to expel the respired air, by pushing the viscera upwards against the diaphragm, and as we think by pulling the ribs downwards.

The author examines very fully the question, what is the bulk of air taken in by an ordinary inspiration, and furnishes us with the statements and reasonings of Borelli, Jurin, Goodwyn, and Menzies, and fixes the average quantity, after Goodwyn, at about 40 cubic inches, though he notices the discrepant results obtained by Davy, (13½ cubic inches) and Messrs. Allen and Pepys, who found that 16½ were commonly taken in by the persons they employed in their experiments. But though 40 cubic inches be the measure of an ordinary inspiration, it is by no means the measure of the quantity of air contained in the thorax. Dr. Bostock found from experiments performed on himself and others, that 160, or 170 cubic inches of air can be expelled, after an ordinary expiration has already taken place; so that 200, or 210 cubic inches, may be considered as the difference between the states of ordinary inspiration, and of forced, or extraordinary expiration. No act of expiration, however powerful, can completely empty the lungs, and the probability is, that at least 120 cubic inches remain, after the most complete act of expiration, even the last, or that which takes place at death.

He sums up the whole of this subject, at p. 34, as follows. Assuming 170 cubic inches as the quantity which may be forcibly expelled, and that 120 will still be left, we have 290 as the measure of the quiescent lungs. Add to this 40, the amount of a natural inspiration, and we have 330 cubic inches of air, as the capacity of the lungs in their distended state. One-eighth may be changed by each respiratory act, or 4000 times their bulk may be expelled in 24 hours. The whole quantity of air respired in 24 hours, is about 666½ cubic feet, equal to 1,152,000 cubic inches.

The next subject is a curious one, which was proposed by Wm. Harvey for the consideration of his contemporaries. What is the cause of the first inspiration? A child born at the seventh month of utero-gestation will breathe as soon as it is born, but cannot live an hour afterwards without breathing. Why is it under the

necessity of breathing always, after having once respired; since it might have continued to live, and grow, for two months, if the first act of respiration had not been performed? Notice is taken of the answers of WHYTT, HALLER, and DARWIN; yet Dr. BOSTOCK thinks it may be doubted, whether we are in possession of any data, which will enable us to explain the difficulty. He suggests, however, the state of compression exercised in the uterus on the surface of the child's body, and its position which prevents the descent of the diaphragm and the rise of the ribs; but when these circumstances are changed after birth, air rushes down the trachea, in consequence of the elastic dilatation of the thorax, after the removal of these obstacles: this explanation is evidently not satisfactory. He cites in a foot note, the opinions of BORELLI, LISTER, SWAMMERDAM, HARTLEY, BLUMENBACH, and many others, equally insufficient to explain this point. The author regards also as undecided, the much argued question as to the cause of the alternations of respiration. Why, for example, is a portion of air, which has remained a given time in the lungs, capable of exciting the contraction of the diaphragm, in order that more may be added to the quantity, say the 290 cubic inches, already contained in them? He reserves for a future opportunity, the inquiry, how far the eighth pair of nerves, which is distributed over the lungs, imparts to them the power of feeling pain, which acts as a stimulus upon the diaphragm.

At p. 48, commences a series of remarks upon the mechanical effects of respiration; and first, on the circulation of the blood, which the readers of our journal well know has lately attracted the attention of BARRY and others.

HALES's experiments are the first which deserve our attention; particularly on account of their resemblance to those of BARRY. He inserted a tube into the crural artery of a horse, and observed that the blood was evidently raised to a greater height in the tube, when the animal made a deep inspiration; which circumstance he explained by supposing that the blood traversed the pulmonary organs more easily when they were thus distended, and supplied the heart more abundantly, than in other states.

Dr. BOSTOCK remarks, that we may, perhaps, go so far, as to admit, from this fact, that, in an *exhausted* condition of the system, the blood passes through the lungs most easily in the state of full in-

spiration, but contends, that we are not warranted to make the same conclusion under ordinary conditions of the system; because, we know from an experiment of GOODWYN, carefully performed, that when water was introduced between the pleuræ of a dog, so as to occupy one-third of the cavity, no retardation of the blood in the lungs took place, though the respiration was rendered laborious; a view, which is also supported by BICHAT, from express observations and experiments. Further, in the healthy state of the system, we respire 20 times in a minute, but the heart contracts 80 times; so that, during each act of respiration, there must be four contractions of the heart, which occur equally in the state of expiration, or inspiration, without any corresponding change in the force or volume of the pulse. Besides, we find it very difficult by the utmost effort, whether of inhaling or exhaling the air, to produce any effect on the pulse; yet what a difference between these and the ordinary condition of the lungs.

Dr. BOSTOCK speaks of various other mechanical effects of the function, and among others, the compression of the abdominal viscera, the lacteals, &c. In the forced or extraordinary actions of the thorax, says he, these effects may be even considerable, although we cannot suppose that they will be very great in ordinary respiration; and upon the whole, we may conclude, that they are much less powerful than they were supposed to be by the physiologists of the last century.

At section 3, he begins his remarks on the changes produced upon the air by respiration. It was not until the time of BOYLE, that physiologists were fully sensible of the fact, that a perpetual supply of successive portions of unrespired air is essential to life. This fact, with some of its connected phenomena, was known to SYLVIUS, BAGLIVI, BORELLI, LOWER, and WILLIS. But MAYOW announced the air of the atmosphere to be a compound body, and that it contained, as one of its constituents, a peculiar gaseous substance, which he denominated nitro-aërial spirit: this substance supports flame, and is imparted to the blood by the act of breathing. These ideas, however, are inapplicable to the modern doctrine of oxygen, or any other chemical principle. HALES, BOERHAAVE, and HALLER, were equally ignorant of the real nature of the

changes produced on the air by respiration, as the before-mentioned persons.

Black ascertained the existence of fixed air. He knew that it was disengaged in the lungs, and occasioned the difference between inspired and expired air. Black made his discovery about 1757, and Priestley published his brilliant discoveries in relation to oxygen, in 1772. After him, Lavoisier took up the subject, and showed that in respiration we have not only an abstraction of oxygen, but a production of carbonic acid; while the nitrogen is not affected, serving merely the purpose of diluting the oxygen.

The author proceeds at p. 71. to examine, in succession, the questions, as to the quantity of oxygen abstracted from the air; the carbonic acid formed; whether the volume of the air be affected by respiration; whether the nitrogen be affected; and, lastly, what is the origin and quantity of the aqueous vapour exhaled in the process. We regret that we cannot follow him throughout this interesting examination, wherein he arranges and elucidates all the chief experiments and theories of the most distinguished writers on the subject; but we will at least quote the whole of his "general conclusions."

"Having now examined, in succession, the various effects which respiration has been supposed to produce upon the air, I shall briefly recapitulate the results of our inquiry. 1. Air which has been respired, loses a part of its oxygen; the quantity varies considerably, not only in the different kinds of animals, but in different animals of the same species, and even in the same animal at different times, according to the operation of certain external agents, and of certain states of the constitution and functions. Upon an average, we may assume, that a man, under ordinary circumstances, consumes about 45,000 cubic inches, or nearly 15,500 grains of oxygen in 24 hours. 2. A quantity of carbonic acid is produced, the amount of which varies very much according to circumstances, both external and internal; its quantity depends, to a certain extent, upon the quantity of oxygen consumed, but the two are not in exact proportion to each other. In a great majority of cases, the quantity of carbonic acid produced, will be found to be less than that of the oxygen consumed; so that there will be a surplus quantity of oxygen, more than is necessary for the production of the carbonic acid. In consequence of the variations which take place in the amount of the carbonic acid produced, it appears almost impossible to fix upon any number which may indicate the average quantity, but it may be stated to be somewhere about 40,000 cubic inches in 24 hours. This will weigh 18,600 grains, or nearly 3 lbs. and will contain 5,208 grains of charcoal, and 13,392 grains of

oxygen, which will be 2,100 grains less than the quantity of oxygen consumed. 3. The volume of air is diminished by respiration; but this, like the changes mentioned above, varies so much at different times, that it is almost impossible to form any statement of the quantity; perhaps we may assume that air, which has been once respired, is diminished by about 1-80th of its bulk. 4. It appears probable that nitrogen is both absorbed by the lungs, and exhaled from them; but the processes of absorption and exhalation differ very much, both in their absolute quantity, and in the relation which they bear to each other; so that the proportion of nitrogen in the air, is sometimes diminished by respiration, is occasionally increased, and occasionally remains without alteration. 5. A quantity of aqueous vapour is discharged from the lungs, mixed with, or diffused through the air of expiration, but we have not sufficient data, from which to decide upon its amount; and it is probable that the quantity varies considerably in the different conditions of the system, and the different situations in which the body is placed." p. 110—12.

In sect. 4th, the author examines "the change produced upon the blood by respiration." In early times, a numerous and learned body of physiologists, supposed the effect produced on the blood to be merely mechanical. A second class, in which we find the illustrious names of HARVEY, BOYLE, HALES, and HALLER, supposed that the blood, in its passage through the lungs, discharged some noxious matter, which, together with the aqueous vapour, was removed by respiration; while a third class, among whom we may rank LOWER, HOOKE, MAYOW, and many of the Italians, conceived that the air imparted something to the blood, by which it was converted into the arterial state. We are indebted to LOWER for the discovery of the fact, that the change of blood from venous to arterial, takes place in the capillaries of the lungs; a discovery which he demonstrated by the most ingenious experiments. He naturally, from these experiments, concluded that this change is effected by the air. These results were defended and illustrated by CIGNA of Turin. PRIESTLEY took up CIGNA's opinion, and showed, that a piece of purple crassamentum is changed more suddenly, and completely, to the scarlet tint, by contact with oxygen, than with atmospheric air; while nitrogen, hydrogen, and carbonic acid, reduce the scarlet crassamentum back again to the purple tint. He thought that phlogiston was separated from the blood by the act of respiration, and that this was the principal end of that function. LAVOISIER, having discovered the composition of carbonic acid, inferred from all the facts, that the princi-

pal difference between arterial and venous blood, consists in the latter possessing a quantity of the last mentioned substance, which it throws off in the lungs, whereby the blood becomes *decarbonized.*

Crawford made the first attempt to explain the source from whence the carbon is derived. He supposed, that as the old particles, of which the body is constituted, become effete, their place is supplied by new ones continually deposited in their room. As the blood is unceasingly depositing its nutritious matter, it is sustaining a constant loss, and becomes even more deteriorated by receiving the effete portions, or putrescent matter, which, however, are afterwards discharged in the lungs. These effects are produced in the systemic capillary vessels; and hence the difference between arterial and venous blood. Our author objects to this part of Crawford's hypothesis, that we have no proof that the capillary vessels can take up any thing once deposited, and that we have an obvious source of carbon in the thoracic duct, which empties the chyle into the veins near the heart; and hence, he is led to conclude, that blood becomes venalized, not by what it gains in passing into the veins, but by what it loses in forming the various secretions, or in the nutritive processes.

Mr. Ellis's hypothesis concerning the source of the carbon, is very different. He thinks that it is an excretion from the exhalant vessels of the lungs. These vessels have the power to discharge both carbon and water; the former in a gaseous, yet uncombined state, but becoming carbonic acid when united with the oxygen of the air in the vesicles of the lungs.

A different view was taken by La Grange, who conceived that the oxygen enters the blood, and forms a loose combination with it, so as to occasion the scarlet tint to take place. As it proceeds in the round of the circulation, it enters into an intimate union with the carbon, forming carbonic acid, and thus venalizes the mass. To enforce this theory, many experiments have been made, particularly by Hassenfratz; one of which was to fill a number of tubes with arterial blood, and seal them hermetically. When this was done, he uniformly found that the blood, after some time, lost its scarlet colour, and acquired the complete venous aspect, which might be considered as a satisfactory proof, that venalization is dependent on a gradual and progressive union of particles already present.

"The merits of the question," says Dr. B. "may be rested almost exclusively upon the single point, whether the oxygen which is consumed be exactly replaced by an equal bulk of carbonic acid, the nitrogen remaining altogether passive; or whether there be a surplus quantity of oxygen absorbed by the blood, as well as a reciprocal absorption and exhalation of nitrogen. After duly balancing the facts and arguments that have been advanced on each side of the question, I have been induced to adopt the latter of these opinions; and, as a certain degree of absorption of both oxygen and nitrogen, appears to take place in the lungs, there is no difficulty in supposing that this is the case with respect to the whole of what is employed in the system; and we shall probably find it to be more consonant to the other operations of the animal economy, to conceive of the union between the oxygen and the carbon, being brought about during the course of the circulation, than by a momentary contact in the lungs alone." p. 134.

After remarking somewhat at large on the experiments of EDWARDS, and on the questions, is the whole air absorbed, and on which part of the blood does the air act, he recapitulates the section as follows:

"1. The blood, when it leaves the right side of the heart, is of a purple colour; during its passage through the lungs, it is converted into a bright scarlet, and again acquires the purple colour when it arives at the venous part of the circulation. 2. This change from purple to scarlet, is effected by the oxygen of the atmospheric air, which is received into the vesicles of the lungs. 3. The same change of colour may be produced upon the crassamentum of the blood out of the vessels, by exposing it to atmospheric air, or still more to oxygen; while, on the contrary, scarlet blood is rendered purple, by exposure to hydrogen, nitrogen, or carbonic acid. 4. The blood, in passing through the lungs, discharges a quantity of carbon, which is expired in combination with oxygen, under the form of carbonic acid gas. 5. A quantity of aqueous vapour is discharged from the lungs; but this is rather to be considered as the result of secretion, or transudation, than as a proper effect of respiration. 6. The blood, in passing through the lungs, absorbs a portion of oxygen; and this appears to be more than what is necessary for the formation of the carbonic acid which is discharged. 7. It is probable that the blood, as it passes through the lungs, both absorbs and exhales nitrogen; the proportion which these operations bear to each other, being very variable, and depending upon certain states of the system, or upon the operation of external agents. 8. It appears, upon the whole, probable, that the atmospheric air is absorbed by the blood in its whole substance; and that certain proportions of each of its ingredients are discharged or retained, according to the demands of the system. 9. We have no proof that hydrogen is discharged from the blood." p. 143.

We cannot follow Dr. Bostock, in the long and interesting discussion which now ensues, on the respiration of different gases, or on the remote effects of this function on the living system; in which he reviews the experiments of Legallois, Provencal, and others, and examines the nature of the vital principle, as it is called, concerning which he speaks in the following terms:

"I conceive that the present state of our knowledge does not admit of our giving a satisfactory answer to this question; but, so far as we are able to understand it, I think it is very evident that it depends upon no single cause or principle, but upon the conjoined operation of many actions, which together constitute life, or by the operation of which the living differs from the dead animal. The regular supply of fresh materials, as furnished by the digestive organs, the removal of various secretions and excretions, and lastly, the abstraction by the lungs of the superfluous carbon and water, effects which depend upon the united action of both chemical, mechanical, and vital actions, are among the various causes which probably all contribute to the ultimate object." p. 192.

We must now proceed to chapter VIII. which treats of the difficult and contested subject of animal temperature, which is handled in the following order:—1. What is the efficient cause or source of animal heat; 2. By what means is its uniformity preserved; 3. How is the body cooled at high temperatures; and lastly, what is the connexion between the functions of calorification, and the vital powers of the system. Here, as usual, Dr. B. gives us a concise, but spirited sketch of early opinions, which is admirably calculated to lead on the mind of the student to a clear and dispassionate view of the most approved doctrines of the present day; because, when the mind is permitted to trace out, step by step, the progress which has been gradually made from the first inceptions of knowledge on any subject, to the highest possible attainments therein, it will rest more permanently, and scan more clearly the whole retrospect, which lies as it were open and naked under the eye. This sketch we must be satisfied with commending to our readers, being obliged ourselves to commence with Lavoisier, who, observing a perfect similarity between the results which he had obtained from the combustion of charcoal and the products of respiration, inferred, as Dr. Black had done, that heat must be generated by the formation of carbonic acid in the lungs. Shortly after this period, Crawford commenced his

investigations, and founded his theory on the three following positions:—1. That as the air in the lungs undergoes the same change as takes place in common combustion, so heat is generated in a similar manner. 2. The same process which converts the oxygen of the inspired air into carbonic acid, converts venous into arterial blood; but arterial possesses a greater *capacity for heat** than venous blood, and hence, the heat which would otherwise render the arterial blood hotter than the venous, is employed in saturating its *greater capacity*, and does not actually raise the temperature. 3. The heat is not, therefore, set at liberty in the lungs, but in the general system, where it supports the animal temperature, and that, in proportion as the mass becomes venalized, and of diminished capacity for heat.

"The hypothesis which CRAWFORD," says Dr. B., "constructed upon the abovementioned positions professed to be the result of direct experiment in all its parts. It removed the objection that had been urged against BLACK's doctrine, and afforded one of the most interesting and beautiful specimens of the application of physical and chemical reasoning to the animal economy, that had ever been presented to the world." p. 257.

Nevertheless, this theory has been controverted by many able experiments.

Dr. DAVY found the blood of the left side of the heart, one degree warmer than that of the right side, and MAGENDIE says it is warmed about one per cent. in passing through the lungs; while Mr. COLEMAN says, that though the external surface of the heart is equally warm on both sides, yet the blood in the right, is one or two degrees warmer than that in the left ventricle. All these varieties of opinions may serve to convince us, that such experiments must be very difficult to perform with that degree of accuracy and precision, which may entitle them to our entire reliance and confidence. Such experiments, therefore, might be regarded as insufficient to overturn CRAWFORD's doctrine of unequal capacity, and equal temperature. But Mr. BRODIE attacked the doctrine more powerfully, by his celebrated results, obtained by artificial respiration in decapitated animals. Cutting off the head of a rabbit, he secured the vessels, and kept up respiration by means of a bellows. The action of the heart continued under this operation, and the

* The *capacity* of arterial exceeds that of venous blood, as 114.5 to 100. according to Crawford. Vide p. 258. Bostock.

venous blood became arterialized, by passing through the lungs, as perfectly as in health, and was attended by the usual disengagement of carbonic acid; but there was no disengagement of animal temperature, it being found, that the body cooled even more rapidly than in a decapitated rabbit which had not been made to respire artificially.

Such were the apparent plainness and simplicity of the inferences from these experiments, that it was thought the chemical theory must be entirely abandoned, for the opinion that respiration, so far as respects the production of carbonic acid, is not the cause of animal temperature, and is only remotely connected with it, and that the lungs have no immediate or direct concern in the operation, but that it depends upon the nervous influence. Messrs. BRANDE, YOUNG, THOMPSON, and EARLE, are cited as being of this opinion. Dr. BOSTOCK, however, points out several sources of fallacy in the above results, and still adheres to the former opinion, being enlightened by the experiments of LEGALLOIS and PHILIP.

"We may, therefore, conclude upon the whole," says he, "that although there are many difficulties which attach to particular parts of the subject, the source of animal heat is in the action of the air upon the blood, and that it ultimately depends upon the abstraction of carbon from this fluid, and the conversion of oxygen into carbonic acid." p. 274.

We shall now abandon this part of the work, and proceed to a sketch of what Dr. B. has given us in chapter IX, which treats of the subject of *secretion*.

The idea formerly attached to the word secretion, was, that it meant separation, or the separation from the mass of the blood, of something that existed in it, by certain mechanical means or chemical operations, analogous to precipitation. At present, it is thought to consist in the production of a substance, which, as such, did not previously exist there.

"Perhaps," says the author, "it would be more correct to combine both these ideas, in our conception of the process of secretion, and to define it, that function by which a substance is separated from the blood, either with, or without experiencing any change during its separation." p. 316.

Thirteen pages are next occupied with observations on the structure of glands, &c., and remarks on preceding arrangements of the secretions, which being liable to many objections, Dr. B.

has been induced to substitute for them, a new classification, under the eight following heads, viz. The aqueous, the albuminous, the mucous, the gelatinous, the fibrinous, the oleaginous, the resinous, and the saline.

Overlooking the remarks on the aqueous and albuminous secretions, we shall cite some of those which he makes on the mucous.

"We now come to the 3rd class of secretions, the mucous, which differ from the aqueous and albuminous, in this essential particular, that whereas the two former appear to consist of substances that are merely separated from the blood, the essential character of the mucous depends upon a substance which did not exist in the blood, but which is formed by the action of the gland. We accordingly find that in the case of these secretions, we are generally able to demonstrate the organ by which they are produced, and that some of the mucous glands are among the most elaborate with which the body is furnished. The mucous secretions are distinguished by their viscidity, or their capacity of being drawn out into threads, and by being with difficulty soluble in water, although they are already united to a considerable quantity of it. The animal matter, which forms the basis of the mucous secretions, and which gives them their essential characters, appears in many of its chemical relations to resemble albumen in the coagulated state; so that we are led to suppose that at least one effect of the mucous glands, consists in the coagulation of the albumen of the blood." p. 340.

The mucous secretions differ also from the albuminous, in the state of their salts, which are neutral, while in the latter, as in serum for example, they are uncombined. The mucous secretions are also peculiar in their seat, being either directly exposed to the air, or found in cavities which have external communication. Sometimes the glandular apparatus is very large, as in the salivary glands; but in other cases, a substance nearly resembling saliva is formed without the intervention of any gland that we are able to detect. Under the head of mucous secretions, are comprised all the products of the mucous surfaces, the saliva, and the gastric juice; although it is difficult to conceive that the latter is not possessed of some peculiar ingredient. He is disposed also to rank with them, the tears, a considerable part of the seminal fluid, and perhaps the pancreatic juice, though this last is very little understood.

Dr. B. thinks that

"If the idea be correct, that the substance which gives the mucous secretions their characteristic properties be albumen in the coagulated state,

it will follow that the solid membranous bodies must belong to this class, rather than to the albuminous, and ought indeed to be considered as the completion of that process, of which a mucous secretion is the first step."

He infers, also, that if the albuminous and mucous substances are so nearly allied as above supposed, a slight change in the secretory action may change the product, and give an albuminous for a mucous matter, and vice versa; as he has observed in mercurial salivation, and as most practitioners have probably observed with him.

Passing over the gelatinous, we come next to the fibrinous secretions. Muscular fibre is the result of this secretory process, and seems to be a mere separation of a substance before existing in the blood, which the author thinks is accomplished as a mere deposite, in the proper situation, from the mouths of the capillary vessels; requiring no further change to fit it for its functions.

It may be doubted whether there be any other animal matter that ought to be arranged under the head of fibrinous secretions; and Dr. B. has already arranged such as possess a fibrous structure under the head of albuminous products. We here expected from him, who has so much esteem for HALLER and his writings, a complete examination of the question, as to the nature of the fibrous coat of the arteries, which, says he, "probably must be considered as a mere variety of the muscular structure;" but the subject has been touched on in the first volume, and the reader is referred to it, for some remarks on the celebrated opinion of BERZELIUS and YOUNG, that the chemical composition of these parts does not seem susceptible of reconcilement with the contractile phenomena attributed to muscular fibre properly so called. We will remark here, that the appearances presented by the fibrous coat of the arteries are not very different from those exhibited by the uterus, immediately after delivery, and when freed from blood; yet who is ready to deny to the womb, a muscular contractility of the most decided, and even powerful kind? The author does not seem ready to admit even the accuracy of BERZELIUS' experiments, and says it would be desirable to compare the elementary analysis of the muscles of fishes, and of the mollusca, with those of the mammalia, in order to ascertain with what varieties of chemical composition, muscular contractility can be connected. We

should probably, however, find some difficulty in reconciling the chemical with the physiological arrangement.

Under the head of resinous secretions, we have an account of the bile, with the analysis of that fluid by various hands, as THENARD, BERZELIUS, &c. Our attention, however, was particularly attracted to the following observations, which are of more general interest than the minuter details.

"The great size of the liver, and the peculiar nature of the fluid which it secretes, has naturally led to various conjectures, respecting its relation to the general actions of the system, many of which are palpably incorrect, and founded upon fundamentally erroneous doctrines. It was a favourite opinion of some of the older physiologists, that the bile was a highly putrescent fluid; and they supposed that one principal use of the liver, was to carry off from the system, all the matter which was disposed to the putrid fermentation. By the modern physiologists, the bile has been supposed to be immediately useful in promoting the process of digestion, and it is very probable that this is the case; but there are various pathological considerations which induce us to regard the bile as essentially an excrementitious substance, although, in conformity with the usual operations of the animal economy, some other important purpose may be served by it. When the venous blood becomes loaded with inflammable matter, which cannot be discharged from the lungs, principally in consequence of the high temperature to which the animal is exposed, and when, from certain causes, one of which appears to be the increase of cutaneous perspiration, this excess of inflammable matter is not employed in the deposition of fat, the liver would appear to be the organ by which it is removed. In ordinary cases, the quantity discharged is small, probably not more than what is sufficient to preserve the liver in its healthy state, and to perform the secondary objects to which the function is subservient; but when, from a conjunction of circumstances, there is an excess of inflammable matter, its accumulation is prevented by an increased discharge of bile." p. 369.

Urea also possesses the characters of a resin, but not so completely as the resinous part of the bile. It is probably wholly excrementitious, and as it contains a large proportion of nitrogen, it is inferred that the kidney is the principal emunctory for that substance, whose accumulation beyond the due proportion, would be inconsistent with health, or, perhaps, with life itself. Dr. B. here notices a difficulty that had arisen on the subject of the origin of nitrogen in graminivorous animals; and, as the food which they consume contains almost no nitrogen, this difficulty would be very great, provided no source was admitted for its introduction into the body except the ingesta of the stomach. But if we concede, as has been

done in a preceding page, that nitrogen is constantly absorbed by the lungs, the difficulty vanishes, and we have an abundant supply of it, for the formation of the fibrin of the muscles, which, being often suddenly contracted, demand an excess of nitrogen to be always present for such emergencies. This excess is kept down by the kidneys.

A curious and important physiological question is discussed at p. 383, under the head of saline secretions, the last in the arrangement. It respects the origin of the salts which exist in the fluids or solids of animals, especially the earth of bones; whether it is actually formed in the body, or received into it with the aliment or drink, and afterwards separated and deposited.

"A great proportion of the substance of several of the testacea, and crustacea, consists of carbonate of lime; and, it appears probable, that many of the large calcareous strata which exist in different parts of the world, have originated from the detritus, or decomposition of these animals. We are then naturally led to inquire what is the origin of this lime? Did it exist in some other form previous to the creation of these animals? Did they receive it into their system, and organize its particles so as to mould it into their shells and crusts? or have their digestive and secreting organs the power of actually generating lime?"

The same kind of difficulty obtrudes itself in regard to vegetables. The carbon, earths, and metals, which they contain, are insoluble in water, and yet it is by the imbibition of fluids that they are nourished and grow. VAUQUELIN and PROUT have come to the conclusion, that these substances are developed in the animal by the vital powers. Dr. PROUT, by careful analysis of the egg-shell and its contents, at different stages of its progress towards finished incubation, satisfied himself, that the chick had acquired a greater quantity of earthy matter than existed in the egg in its early state. Dr. PROUT speaks as follows: "I by no means wish to be understood to assert, that the earth is *not* derived from the shell; because, in this case, the only alternative left me, is to assert, that it is formed by transmutation from other matter—a confession which I confess myself not bold enough to make in the present state of our knowledge, however strongly I may be inclined to believe, that, within certain limits, this power is to be ranked among the capabilities of the vital energies." Similar results have been obtained from the analysis of vegetables planted in sulphur or clean washed sand, and moistened with distilled water.

"The conjoined evidence," says the author, "of BRACONNOT, SHRADER, and EINHOF, seems to prove very clearly, that we cannot account for the introduction of the constituents of vegetables from the soil or water with which they are in contact. BRACONNOT appears to have conducted his operations with great attention to accuracy. He concludes that 'organic force, aided by solar light, develops in plants, substances which have been regarded as simple, such as earths, alkalies, metals, sulphur, phosphorus, carbon, and perhaps azote.'" Vide p. 388.

Either some of the bodies which have heretofore been regarded as simple, such as oxygen and carbon, are really compounds, or there is a creation of absolutely new matter by the energies of the living organs. Dr. BOSTOCK is of the former of these sentiments, though it appears to be contradicted by numerous facts, which, however, are less difficult to surmount than the idea of an entire new creation of matter.

The work is occupied from p. 389 to 427, with a close and rigid examination of the theories of secretion, whether animist, chemical, mechanical, or nervous. Of course, we are furnished with a review of the opinions of the Stahlians, maintained on this subject by JOHN HUNTER, DARWIN, BLUMENBACH, and BICHAT, and said to be still the ruling doctrine of the London school. The nervous doctrine, also, as sustained by BRODIE, PHILIP, and others, is extensively commented on. The author's own opinions are set forth as follows:

"When we consider the mere act of secretion, to which our present inquiry extends, I should say that contractility is the only power which is essential to the operation. The action of the heart in the first instance, propels the blood into the capillaries; it is transmitted through these with different degrees of velocity, and subjected to various modifications of compression, so that its constituents are more or less intimately mixed together. Some of its finer parts are transmitted into vessels too minute to admit of those that are more viscid or tenacious; while, at the same time, it may be supposed to experience various alterations from change of temperature, from the action of the atmosphere, or from the mixture of the different secretions with each other."

He proceeds to state his belief, that though the nervous action is not essential to secretion, nevertheless the organs of secretion in the higher animals are very much influenced by the nerves; which, like an additional agent, enable the organs to multiply results in very great variety.

"Still, however, we can form no clear conception of any mode in which the nerves can act upon the organs of secretion, except through the me-

dium of the circulating system; so that here again we reduce the primary operation to the contractility of the muscular fibre, notwithstanding the share which the nervous system may have in the effects, considered as a secondary agent." p. 426.

With regard to the formation of the saline secretions, he confesses the difficulty of explanation to be insurmountable, as we stated before when speaking of those products.

Chapter X. comprising 98 pages, teaches us the doctrines of digestion. It is manifestly impossible to treat of this department as we should desire. We can only state, that Dr. BOSTOCK rejects the new opinion of MONTEGRE and others, and supports the claims of REAUMUR, STEEVENS, and SPALLANZANI, to our credence for their veracity and fairness. It is true, as Dr. BOSTOCK says, that

"The experiments of SPALLANZANI on this subject are quite decisive, and so varied and multiplied, as to meet every objection that could be urged against them. We imagine that our readers are well acquainted with these experiments, related with a candour, naiveté, and spirit, which render them in the highest degree amusing as well as instructive."

Chapter XI, which treats of absorption, commences on the 584th page. By the absorbent system he means to designate those organs which are exclusively employed in the function of absorption, and these consist of the lacteals, the lymphatics, the conglobate glands, and the thoracic duct. An elaborate description is given of the apparatus of absorption, with a pretty full history of the discovery of it by ASELLI, RUDBECK, BARTHOLIN, and PREQUET, for an account of which we might refer our readers, as well to this book as to an article in the Philadelphia Journal of the Medical and Physical Sciences, published two or three years ago by the present writer. We have also an account of the dispute on the subject of venous absorption, which arose between Dr. WM. HUNTER, and MONROE *Secundus*. In relation to MAGENDIE'S experiment on the dog, which seemed to prove beyond doubt or objection, the absorption by veins, Dr. B. remarks that he does not

"Feel disposed to assent to the modern doctrine of absorption merely upon the faith of experiments, until they are further repeated and diversified; but in the mean time we may go so far as to assert, that venous absorption is neither impossible, nor, perhaps, antecedently improbable; and that with the evidence which we have in its favour, we can admit of no physiological hypothesis, or train of reasoning, which necessarily involves its non-existence." p. 567.

We are surprised at this admission from Dr. Bostock, and should be willing to attempt, if we had a proper opportunity, a train of reasoning which we think would prove its non-existence. If, as the school of the Val de Grace is attempting to teach us, there be in all the tissues a parenchymatous or extra-vascular substance, in which the blood is regularly, and normally effused from the open ends of minute vessels, and kept in a state of extra-vascular circulation, till it is pumped up by the open mouths of other capillaries, then the question is settled in the affirmative. No man would have the hardihood to deny, that the upas tieuté or other poison being mixed with this effused circulating fluid might be passed directly onwards to the heart. Who is ready to admit this parenchyma? The observations of M. Rossi, related in the Quarterly Summary of our last number at p. 374, show manifestly, what has long since been asserted by Cruikshank, that there are many points of connexion between the sanguiferous and lymphatic vessels, besides the large ones near the heart. We have no doubt that such absorbent ducts are abundant in all parts of the body, and afford ample explanation of the supposed phenomena of venous absorption, which are certainly not more reasonable than the antiquated and ridiculous offices of the meseraick veins, which with infinite good temper could not only suck up chylus and carry it to the liver for hæmatosis, but afterwards like a servant of all work send it forth for the nourishment of the *parts*.

Here we must stop, when we have added that every medical man who has not Dr. Bostock's work in his library, is without the means of a vast fund of information, which to be wanting in, is equally injurious to himself, and the unspeakable responsibilities committed to his professional skill and honour.

ARTICLE XI.—*Recherches Anatomico-pathologiques sur l'Encéphale et ses Dépendances.* Par F. LALLEMAND, Professeur de Clinique Chirurgicale à la Faculté de Médecine de Montpellier, Chirurgien en chef de l'hôpital, &c. "Ars medica tota in observationibus." F. HOFFMAN. "Neque enim numerandæ sunt, sed perpendendæ, observationes." MORGAGNI. A Paris, Tom. I. Parties 1, 2, 3.—1824. Tom. II. Partie 1.—1825. pp. 512 and 230.

Traité Clinique et Physiologique de l'Encéphalite, ou Inflammation du Cerveau, et de ses Suites, telles que le Ramollissement, la Suppuration, les Abcès, les Tubercules, le Squirrhe, le Cancer, etc. Par M.-J. BOUILLAUD, D. M. Ancien interne des hôpitaux, &c. "La pathologie est la physiologie de l'homme malade." MAGENDIE. A Paris, 1825. pp. 350.

WE could not give a better general idea of the views evidently entertained, and faithfully followed up by the authors of the two works we have cited, than by inserting their mottos. Those pithy expressions, which are commonly introduced in the titles of books, to serve as standard bearers to the thoughts of the author, have often little to do with the work; but the examples before us eminently characterize the productions which they introduce. M. LALLEMAND has not only adhered in the strictest manner to the process of direct induction from facts of actual observation, but has accommodated his reasonings and inferences, to the order in which he has inserted them. Thus, he first gives us a case, then calls our attention to some one or two of its peculiarities: next gives us another example, compares it with the first; and, after a considerable series of such comparisons, he proceeds to make a few simple deductions, still, however, of but limited application. It is not until he has collected a large congeries of cases, each superimposed on the other, in a manner remarkably similar to the succession of propositions in the classical treatises of geometry, that he pauses to recapitulate; and the reader suddenly discovers, that one species or form of cerebral disease has been already fully described and exemplified. Like the character in MOLIERE, who found he had been talking prose all his life without knowing it, we are made accurate pathologists, and have become

skilful in diagnosis, while we have seemed to ourselves to be only feeling out the correct road.

To achieve this object, recourse has been had to many means. Although provided with a large amount of cases observed by himself, or communicated by his personal friends, he has been well aware of the value of the labours of the great pathologist of Padua. Full as he was of that enthusiasm which prompts the reviser and reformer only to draw from the life, when he came to examine, "Nature and MORGAGNI were he found the same." In the inexhaustible mine of the illustrious Italian, he found faithfully portrayed an immense number of those carefully observed facts, which serve as the foundation, or rather composition of every real science; and it only remained for him to make selections from these, and to arrange and compare them with what he obtained from other sources. To have drawn exclusively from nature, would have rendered his work more original; but it would have been an injury to science, to neglect any accessible source of truth; and he did not feel himself at liberty to forsake the advantage, which, as EMERSON the mathematician rather coarsely remarks, is possessed by every one, who is placed, as it were, upon the shoulders of a predecessor. Besides his selections from MORGAGNI, numerous contributions were obtained; among others, from a publication by Dr. DAN DE LA VAUTERIE, and from Dr. ABERCROMBIE's paper in the Edinburgh Journal; a memoir which seems to have found especial favour in the eyes of the Parisian physicians, having been translated, republished, and not a little quoted among them.

The work of M. BOUILLAUD, on the other hand, appears solely designed to methodize and reduce to the system of M. BROUSSAIS, the facts possessed on the subject. He objects to M. LALLEMAND, as so many consequences of the adoption by the latter of the epistolary form, that his facts are not brought together so as to elucidate one another to the best advantage; and that frequent "longueurs" and repetitions are inevitably produced. M. BOUILLAUD has compressed forty-five cases into a solid mass, classified according to his principles, and interspersed with brief reflections; not, however, with discussions and dissertations at length, as professor LALLEMAND has done. The cases occupy 228 pages; and are followed by 119 more of general descriptions and principles,

which close the volume. These latter are extremely brief; the author, like several other writers of the modern school, having economized his reader's time, and, after furnishing, for proof and illustration, abundance of examples drawn from nature, having made his doctrinal matters as concise as possible.

The manner in which the present works, as well as numerous similar ones to which the Paris school has lately given birth, are written, is worthy of the highest praise. It is copied from Morgagni, whom M. Lallemand has further followed in the epistolary form of his publication. We allude to the practice of premising a large number of narratives of individual cases, so selected and classified as to illustrate each other, and render it easier to draw general inferences from them. We frequently meet with writers who refer us entirely to their groups of cases, to obtain that general idea of a disease, which is commonly aimed at by a definition and description. While we are reading faithful narratives of facts, we cannot, they would persuade us, go astray. We know, that whatever we meet with, however unsatisfactory or incomplete, is so much truth, and cannot mislead us. We are expatiating in the fields of nature, and can encounter nothing but reality in every direction. Still, however, in this, as in all other modes of philosophizing, we meet with those checks and qualifications which so forcibly remind us of the imperfection of human science. Passing over what was once most energetically discussed in the Philadelphia Medical Society, an alleged want of *veracity* in medical records, a charge, infamous as it is, not absolutely without foundation—omitting this, there is no doubt that facts can be so arranged, as not only to illustrate, but to lend each other a colour, and lead us to the peculiar dogmas of the compiler, as if by the plainest process of direct induction. In the same manner, select passages of scripture may be so disposed as to express the opinions of any one of a great variety of religious communities. The light which facts mutually shed on each other, is the broad and glorious glow of the sun of truth; but, like the corporeal ray, it is so analysed and refracted by the human instruments through which it passes, that it is too frequently allowed to shine only in colours. If, however, we carry on the metaphor, we may add, that what is thus lost in accuracy, may be regained by quantity and mixture; and that, as the uncertain combination is augmented, we continually

approach, by a gradual but inevitable progress, to that vestal white of certainty, which we are never designed absolutely to obtain. We live in a world of approximations, probabilities, and chances; and to approach truth, ought to be the object of our unceasing efforts.

MORGAGNI enumerates, among the heads of his letters or chapters which treat of diseases of the head, head-ach, apoplexy and the other soporific affections, phrenitis, paraphrenitis, delirium, madness, melancholy, hydrophobia, epilepsy, convulsions, palsy, hydrocephalus, hydrorachitis, and certain affections of the eyes, nose, and ears. M. LALLEMAND has sketched, in his preface, the classification which he intends to adopt for these diseases. It is unnecessary here to cite it, any further than it has been completed in those parts of the work which have come to hand. These embrace, in Letter I, softening of the brain, accompanied by vascular injection, infiltration, or effusion of blood; in Letter II, softening with infiltration of pus, or commencing suppuration; in Letter III, recent abscess; and in Letter IV, which commences the 2nd volume, encysted abscess. This completes, according to M. LALLEMAND's views, an entire outline of the inflammatory affections of the brain. Sudden congestion, and the hæmorrhagic effort, embracing the whole subject of apoplexy, are postponed: and the progressive continuance of his labours will lead him to the consideration of tubercles, and other preternatural productions, and of the symptoms produced by the presence of foreign bodies; next, to diseases of the arachnoid membrane; and finally, to those of the medulla spinalis. This classification is drawn merely from the *leading* morbid appearances; as they are found, most frequently, combined with each other in various degrees of intensity. Dr. BOUILLAUD goes over nearly the same ground; following, however, a somewhat different classification, on which we shall not insist.

The whole of the subjects here enumerated form a field by far too comprehensive for the limited time and space allotted for this review; and we shall, therefore, confine ourselves to some of the points of leading interest, as determined by their intrinsic importance, or their being less familiar to the profession in America.

Inflammations of the brain and its appendages are far more *frequent* than has been generally supposed. They not only occur

in those cases which, by the nosologists, are usually referred to *phrenitis*, but, very frequently indeed, in fevers. We here find ourselves, after the example of MM. LALLEMAND, GEORGET, PARENT, MARTINET, etc., among his compatriots, and in fact, of nearly every one who has devoted particular attention to the diseases of the head, placed in direct opposition to the celebrated BROUSSAIS.

"The brain," says this distinguished teacher, "is, of all the organs, the least subject to phlegmasiæ; because it is hardly ever directly affected by morbid causes, but rather by the sympathies which unite it with the other viscera."

Here, however, it is probable that the reformer was in a great measure influenced by his not having examined the head with sufficient care in his dissections and clinical examinations: at least we should judge so, from the fact of his great and fundamental work on the "Chronic Phlegmasiæ" having been confined to the viscera of the thorax and abdomen. Even his avowed pupil, in the last named of the works before us, acknowledges, that "the pathology of the brain has not yet been sufficiently subjected to the crucible of the physiological doctrine;" and in this crucible he finds it to assume a far greater importance than could be anticipated from the simple perusal of the general writings of his school.

Diagnosis.—MM. LALLEMAND, PARENT, and MARTINET, have concluded, that head-ach, delirium, and convulsions, when they occur with decided marks of inflammation, are characteristic of an affection of the *tunica arachnoidea;* which is liable to diseases similar to those of other serous membranes. When, on the other hand, we have coma, and palsy, these are proofs of a deeper and more severe læsion, involving a portion of the *substance* of the brain itself. In the one case, we have symptoms of an undue excitement, and an irregularity in the vital activity of the brain; in the other, the marks of a more or less complete privation of them. M. GEORGET has endeavoured to show, and we think with success, that the first catalogue of symptoms were really found by these anatomists to be combined, in almost every instance, with a superficial disease of the brain itself, and not exclusively with that of the arachnoidea. Thus, in almost all M. LALLEMAND's cases, there was an inflammatory lymph deposited *under* but not *on* the arachnoidea; the *pia mater* was thickened and reddened,

and red vessels penetrated the adjacent portion of the brain; while a copious secretion of serous fluid was frequently found in the cellular matter covering and uniting all these parts. Now, according to M. GEORGET, we should look, in inflammation of a serous membrane, for effusions of lymph, pus, and serum, on its *free surface*, and not in the cellular texture by which it adheres to the viscera it covers. On the other hand, in what situation should we expect to find the redness, lymph, thickening, and serous exhalation of a superficial inflammation of the brain, but in the *pia mater?* This membrane is known to be the only means by which the convolutions are supplied with their blood-vessels. If, therefore, the head-ach, delirium, and convulsions, which are certainly pretty strong indications of an affection of the brain itself, if, we say, they be produced by an inflammation of a portion of the convolutions, although not so deep as in the other cases alluded to, nor of so long a duration, we cannot reasonably entertain any other expectation than to find the pia mater reddened, and turgid with lymph and serum. Exactly in the same manner, when there exists an inflammation of the pleura, there is found at the same time, a superficial pneumonia of the parts immediately adjacent, which probably gives rise to the cough, &c.; and on the other hand, a superficial pneumonia, if severe, is liable to inflame a portion of the pleura. We then rest in the deduction, that cephalalgia, delirium, and convulsions, are marks of a superficial inflammation of the brain, which very often is accompanied by arachnoiditis; while coma and palsy are proofs of the disease having reached the more deeply situated fibres of communication, and affected a greater amount of substance. If, then, in our use of the term arachnoiditis, we include a superficial inflammation of a portion of the convolutions, we shall find the following distinctive characters of partial encephalitis, apoplexy, and arachnoiditis, or, as it is frequently called for the sake of euphony, arachnitis, offered to us by M. BOUILLAUD. p. 298.

1. "Encephalitis, cerebritis, or inflammation of the brain. At first, a general or partial excitement of the sensitive, intellectual, and locomotive powers; afterwards, a sinking, a gradual diminution, and finally a complete loss of these same powers.

2. "Apoplexy, confining this term to hæmorrhagy of the brain. A sudden palsy, general or partial, of the sensitive, intellectual, and locomotive faculties, without any preliminary spasmodic symptoms." (The author

does not here mean to represent the coma as of slight importance, but as not essential to the definition.)

3. "Arachnitis. Excitement, and then palsy of the faculties already enumerated. These symptoms are the same which characterize a general and superficial phlegmasia of the cerebro-spinal nervous mass. Arachnitis and a general encephalitis are, therefore, confounded together in the symptomatology. The first cannot exist without the second; and the second seems equally incapable," continues M. Bouillaud, "of being produced originally and without being preceded by arachnitis. From this it results, that partial encephalitis may be distinguished from the inflammation of the arachnoid, by the circumstance, that the former only produces local symptoms, while the latter develops general ones; and that, in partial encephalitis, the local palsy which succeeds to the spasmodic state depends on the disorganization of a portion of the brain; while the general privation of strength which succeeds the agitation, in the cases of arachnitis, is the result of a compression or exhaustion of the nervous centres, but not of their disorganization."

M. Lallemand expresses in the following laconic manner, the broad strokes of distinction between these three affections.

"In inflammation of the arachnoid, *spasmodic symptoms without palsy;* in apoplexy, *sudden palsy without spasmodic symptoms;* in inflammation of the brain, *spasmodic symptoms, a slow and progressive palsy, and an unequal and intermittent progress.*"

Finally M. Bouillaud, who agrees with M. Georget so far as to be of opinion that a *general* arachnitis is the same thing with a general and superficial inflammation of the brain, conceives the true diagnosis to lie between these three affections; viz. 1. Partial Encephalitis; 2. Apoplexy; and 3. Arachnitis. He then sketches the following distinctive characters. In the first, spasmodic contractions, and subsequently a circumscribed, partial paralysis; in the second, a palsy as in the first, but a total absence of the spasmodic contractions which preceded it; and in the third, spasmodic contraction of all the system of locomotion, paroxysms resembling epilepsy, and afterwards coma, and a palsy of the whole body.

In the above comparisons, apoplexy is introduced on account of the resemblance of some of its symptoms; but there are considerable points of resemblance in what appears to be the essential character of these diseases. Apoplexy is always found accompanied by the *hæmorrhagic effort*, exhibiting symptoms having a close analogy to those of inflammation; and a part of its pheno-

mena vary, even after the actual occurrence of effusion, in the manner in which inflammatory irritations are known to do. And on dissection, the sanguine deposite is found surrounded by a portion of brain, not only reddened by enlarged vessels, but softened, and tinged with blood, in the manner of the sanguineous softening, of which we have to speak. Frequently, also, numerous minute portions of blood are found effused within the softened and discoloured substance.

Softening of the brain, described by M. ROSTAN, and numerous other French writers, is an affection which seems to be very frequent. That it is so little understood among us, may arise from the infrequency with which we open the head. M. LALLEMAND, after a copious list of cases, occupies 18 pages in reviewing the arguments, which go far to prove that this change is produced by a true inflammation. He shows, p. 73, that

"If you follow, by the aid of recorded facts, the different degrees of sanguine injection in the nervous system, starting from simple distension of the vessels, you will arrive at apoplectic effusions by transitions so insensible, that it will be impossible to find a line of demarcation at which to stop."

He shows that this softening is produced by causes which commonly occasion inflammation, such as wounds, concussions, and contusions of the brain, and the presence of foreign bodies in its substance; that it exists at the same time with inflammation of the meninges, shows itself, in succession, in company with vascular injection, infiltration of blood, and a mixture of small particles of pus, and finishes by transforming itself into an abscess filled with purulent matter, or with genuine pus; that it frequently exhibits at the same time, an exterior circle where the cerebral substance is red, a more internal stratum softened, another within that again, in which pus begins to appear, and in the centre a real abscess containing pus: finally, that softening of the brain displays, during life, symptoms, which are evidently inflammatory, are aggravated by stimulants, and are capable, in rare instances, of a cure by a regular antiphlogistic treatment. Softening, including a weakening of the tissue, is a common symptom in other parts of the body. Thus a change of this kind is regularly described by pathologists as occurring, with inflammatory symptoms, in the mucous membrane of the alimentary canal; and in the more common inflammations of that texture, we find its substance, as well as its

cellular adhesions to the parts lying immediately below, so weakened, that the membrane tears off, upon the slightest cause, in long strips. All tissues, when inflamed, are more easily ruptured, though increased in density; and in the brain these changes are only more conspicuous from its peculiar texture and situation.

Softening of the brain is generally found more fully developed, in proportion as it is confined to a smaller space. We cannot conceive of a whole brain in a state of suppuration or softening; because before it could reach this height, such an affection must inevitably destroy the patient. Sometimes the brain is found yellowish or pale, and less coloured with blood-vessels than natural: and it is then commonly firmer than usual, the white substance having the appearance of gluten. In other instances, it seems infiltrated with serum; and is then less consistent than natural, although in a state which can be clearly distinguished from that softening, which it is our present object to describe. The latter then occurs in two varieties, which M. LALLEMAND considers as two degrees of the inflammatory condition. In one of them, the softened part is injected or infiltrated with blood: if it be cortical matter, (which is by far most frequently the case,) its colour is rosy red, or even brownish, either uniformly, or in different degrees in different parts; if, on the other hand, it be the medullary portion of the brain which is affected, its tinge is much less altered, sometimes scarcely at all. This discolouration in the softening, M. LALLEMAND refers to an infiltration of blood in the texture of the brain. In the other species of softening, pus is supposed to be intimately combined with the cerebral substance. The cortical matter is now found greyish, (?) yellowish, or greenish: the white portion is little altered in hue, as it naturally approaches that of healthy pus. It is, however, often yellowish or greenish. At a more advanced stage of the disease, pus is visibly seen in the texture of the brain, and, to use an expression of M. ROCHOUX, there seems to be a "sort of trituration of the cerebral matter with pus." Minute drops of pus are next encountered; and still later, numerous small abscesses, which frequently unite into a larger one, having ragged parietes, with the appearance of being torn. These two varieties of softening frequently exist at the same time; the part which is softened, greyish, and mixed with pus, being found in the centre of a mass, the outer portions of

which are still injected with blood, and reddish, but less diffluent; the inflammation having evidently advanced farther in the centre than at the circumference. Sometimes numerous clots of blood, of the size of a pin's head, are dispersed through the softened portion; and real apoplexies, or hæmorrhages of the brain, are by no means an infrequent consequence.

Softening may occupy a very small space, a whole lobe, or even, it is said, a whole hemisphere. From the researches of M. Lallemand, it appears that this affection generally occurs in the same portions of the brain as true apoplexy. This anatomist found, among seventeen cases, eight in which it was confined to the corpora striata and thalami, seven where the surface of the convolutions was affected, one in the pons varolii, and one in the middle of a hemisphere. M. Rochoux, on the other hand, examined, with a view to this point, forty-one cases of apoplexy, twenty-seven of which were seated in the above-named great tubercles, and one, making twenty-eight, immediately beneath one of them; while of thirteen others, seven were found in the middle parts of the hemispheres, three in the posterior parts, two in the anterior, and one in the middle lobe. The greater preference of these diseases for the corpora striata and thalami, is accounted for by the great portion of cineritious matter which those parts contain. In the case of apoplexies, this peculiarity was observed by Morgagni.

It is highly probable that the dark brown colour and softened condition of brain affected with this disease, have sometimes led surgeons to mistake it for gangrene; while, on the other hand, the fetid smell which is described, sufficiently proves that in other cases the mortification was real.

We have thus far pursued the principle assumed by our authors, in which they both agree, and are followed by the great majority of the dissectors of Paris. We mean the belief that this affection is inflammatory. In this we have to encounter the authorities of M. Recamier, and M. Rostan. The first of these is "more than ever" convinced, that softening of the brain is an alteration sui generis, a peculiar degeneration, which may be compared to certain alterations of the spleen. He believes this morbid appearance to be independent of any inflammation; and to be produced by "a general cause, a disease of the whole economy, a fever of an *ataxic*, nervous, malignant, or pernicious character," which

exerts its influence in the nervous system, and particularly in the brain, destroying and disorganizing its tissue. From this he draws the origin of "softening, degenerations, and ataxic focuses." [*foyers.*]

M. ROSTAN, on the other hand, considers this affection as "a destruction, a senile death of the part," a process similar to the gangrene of the feet of aged persons. This writer seems to have principally studied it in aged subjects, owing to the nature of his personal engagements. We have not space for a discussion of these points, as they would lead us from our present object.

Induration is described by M. BOUILLAUD as the first effect of general encephalitis. Dr. ABERCROMBIE has described cases, in which a partial hardening seems to have been the consequence of a slow inflammatory action. Vide p. 123, in the present review.

Hydrocephalus, and the *serous apoplexy* of the older writers, and of M. SERRES, are generally the consequences of inflammatory action. We have not space to consider them here. We have, however, already mentioned effusion under the arachnoidea as a symptom of what M. LALLEMAND calls arachnitis, and M. BOUILLAUD, general encephalitis.

Congestion of the brain. Apoplexy without rupture. Coup de sang. Stroke of the sun. This affection seems to bear nearly the same relation to encephalitis, that congestion does to inflammation in any other part of the body. It appears to consist in a rapid distension of the vessels of the head, bearing many analogies, certainly, to a phlegmasia. We have not space to pursue the parallel.

Fevers.—"All the world," to borrow a French idiom, at least in Paris, seems now to be thoroughly convinced, that a great number of fevers, so called, have been substantially, effectually, if not "essentially," inflammations of the brain and meninges. We cite, at once, Messrs. LALLEMAND, GEORGET, MARTINET, COUTANCEAU, RULLIER, and BRICHETEAU, and a minute's search might furnish us with the names of many more who entertain this opinion. The fevers, which, in France, have been styled *maligne*, *pernicieuse*, *adynamique*, *ataxo-adynamique*, and simply *ataxique*, which we translate, malignant, pernicious, (a term of pretty general applicability, one would think,) typhus mitior, typhus gravior, and irregular, or, indeed, unintelligible; all of these exhibit decided

marks of cerebral disease in every instance, and mostly to be distinctly characterized as of the inflammatory kind.

Upon every gradation of opinion, which it has been found possible for human intellect to devise in relation to these doctrines, some physician has been found to take his post; which he in general maintains with equal resolution against those who are higher or lower on the ascent than himself. *Nihil esse—quod non dixerit aliquis philosophorum.* Some, though these seem really to be few in number, still maintain the old nosological, ontological, doctrine, that fever is an undefinable, indescribable agent, existing in the system generally, and *producing* these inflammations as a consequence. The other extreme consists in the uncompromising opinion, as inculcated by Dr. Broussais, that *all* fevers are gastro-enteritises, with or without the supervening complications of inflammation of the brain, or of any other organ; that, where the brain is unquestionably a source of irritation, this at the same time itself depends mainly on the gastro-enteritis for its support, and still continues to aggravate the irritation which was its own parent; whence the direction to apply leeches to the stomach in fevers, the principal phenomena of which are referrible to the head. Now, the impression that nearly all diseases are produced by derangement diverging from one or more central points, and consequently affecting the rest of the body, an opinion, which, when amplified, does not differ greatly from the Broussaian doctrine of irritation, may be said to characterize the modern French school of pathology. They first record the symptoms during life, and then examine the vitiated appearances after death; and, as all symptoms and morbid appearances are local, they are consequently led, very naturally, to consider disease as local also. They follow a principle of no ordinary weight, namely, one of Newton's rules of philosophizing, *to ascribe no other causes to phenomena than are known actually to exist.* Thus, the irritation of one organ produces irritation in another organ—perhaps in the heart, so as to give rise to the phenomena of fever; and it is not necessary to have recourse to a fever in the abstract, to stand as an occult cause, and generate the local symptoms, a supposition which, however venerable from the great names among its adherents, is entirely hypothetical and gratuitous.

Thus far these reasoners agree extremely well with the celebra-

ted reformer; but we now come to the grounds of what may be denominated their *moderate opposition*. Seeing pain and other morbid symptoms in the head, and several other parts of the body, among the first phenomena of commencing fever, they discover no evidence that all this is secondary to a gastro-enteritis. In many instances the head and spine afford the only very important symptoms of inflammation, with the exception of the general sympathies of the circulation; and, they conclude, by a process of inference which we have already described, that the head or other part of the body is the principal source of the fever, which they therefore would style, in an unmixed case, an encephalitis. Still, the existence and importance of the malady of the head by no means preclude the subsequent or simultaneous production of a gastro-intestinal irritation.

It is believed that the encephalitis which gives rise to malignant or typhus fevers, is generally of the extensive and superficial kind, which it is so difficult to distinguish from arachnitis. Among the symptoms are the hebetude of the mind, the convulsive twitches of the tendons, the picking of the bed-clothes, the delirium, the cephalalgia, &c. &c.; and in many instances, particularly in children, convulsions of the more severe kind.

We have already mentioned that professor LALLEMAND entertains opinions similar to these. M. BOUILLAUD, on the other hand, is considered a pupil of M. BROUSSAIS, and can hardly be expected to array himself directly against his master. He maintains, on this point, a modest silence. Contented with pointing out and describing the affections of which he treats, he leaves it to the judgment of the practitioner to decide on their existence in the cases which come before him. It is undoubtedly natural to suppose, that the fact of having given his particular attention to the subject, would lead him to perceive their presence with more frequency than his predecessors; but we observe that his cases do not embrace the mildest forms of the disease, such as M. BROUSSAIS teaches to be merely symptomatic, and of little importance in comparison with the irritation of the primæ viæ, which he believes to constitute the disease. The four cases which he selects as examples of his simplest species of cephalic affection, exhibit, respectively, palsy and convulsions,—convulsions and sudden death,—palsy—and convulsions, among the symptoms. And these are all he gives us, for

this purpose, among forty-five narratives; so that we cannot, from any thing in the present volume, infer that he differs from his preceptor.

Causes of Encephalitis.—Pressure on the head of the infant in labour, falls on the head, dentition, heat, the direct rays of the sun on the head, hypertrophy of the heart, concussions and wounds of the brain, the presence of foreign bodies, the respiration of deleterious gases, poisons taken into the stomach, including spirituous liquors, sudden changes from heat to cold, pain, prolonged wakefulness, prolonged study, fear, chagrin, muscular fatigue, the neuroses of the brain, (an ill-defined class, embracing, for example, both mania and hydrophobia,) all these are said to be such. M. GEORGET expresses doubts of this effect resulting, so frequently as supposed, from the suppression of discharges. Still-born children are sometimes found with marks of this disease; and Dr. ABERCROMBIE states, that, in convulsions from teething, a purulent exudation has been found in the pia mater. Males are more subject to it than females; and the aged are most of all liable to softening of the brain.

Symptoms.—Headach, irritability of the eyes and ears, then obtuseness of the same faculties, suspension of taste and smell, drowsiness, and yet incapability of sound sleep, delirium, more or less complete loss of intellect, spasmodic motions, convulsions in the muscles of the face, members, and trunk, tetanic rigidity or contractions of the same parts, contracted, or dilated and immoveable pupils, stitches and pains in the limbs, violent pain when the contracted limbs are extended or further bent by the assistants, weakness, prostration or palsy of a part or the whole of the system, insensibility of the skin, &c. &c. The irregular affections of the muscular system produce a host of peculiar symptoms; such as squinting, a permanent opening or closure of the eyes, fixedness or distorted rolling of the globe of the eye, a distorted countenance, fixed or changeable, trismus, or the falling of the lower jaw, difficulty, rapidity, or irregularity of breathing, dysphagia, retention of urine, involuntary ejection of urine and fæces, to which we will add costiveness. Vomiting may in some cases be owing to a convulsive action of the muscles. The heat of the surface is variable; sometimes suddenly shifting from an icy coldness to a violent burning, and vice versa, and sometimes unequally

distributed over the body. A similar variety is seen in the expression of the face and eyes, which is sometimes frowning and animated, while at other moments it is entirely inexpressive. The tongue is successively moist and whitish, yellowish, brownish in the middle, and red at the edges, black and dry, cracked, pointed and hard: the lips and teeth are dry and fuliginous. The derangements of respiration and deglutition which we have enumerated, announce great danger. The genitals are sometimes excited, erected, or gangrenous: this announces, as M. SERRES has shown, a malady of the cerebellum. The pulse is strikingly variable; sometimes frequent, sometimes slow, unfrequent, and soft; at the commencement, often full, hard, and frequent; in the decline, generally small, frequent, irregular, and intermittent. ABERCROMBIE has seen it suddenly rise from 60 to 130, and then as suddenly sink again. M. LALLEMAND believes that the explanation of this is to be found in the circumstance, that the inflammation of the brain in reality does not affect the pulse at all; and that the derangements of the latter, are only owing to the sympathetic affections of other parts, or to accidental circumstances. A smell like that of the mouse has been observed in the decline of the disease. Eruptions are retarded or suppressed; wounds of the head become swelled, painful, flabby, and sanious; the pericranium separates itself from the adjoining bone; inflammations, including erysipelas, are suddenly produced, or suddenly cured around them. If the brain be uncovered, it protrudes, forming hernia cerebri. M. BROUSSAIS inculcates the opinion that a gastro-enteritis is produced consecutively in every instance. This the authors not of his peculiar school deny, but admit that it is so sometimes.

We have inflicted the above catalogue of symptoms on our readers, under a sense of its necessity; as, when discussions are afloat, as to the frequency of the occurrence of any disorder, it is of the first importance to define what different persons mean when speaking of it. We could furnish a separate list of prodromi, or precursory symptoms; but will spare, on this point, our readers' patience; merely remarking, that it is of the first importance to attend to slight and incipient marks of disease of the brain, as we shall have occasion to show, that this often constitutes all the difference between the possibility and impossibility of a cure.

We have not space for more detailed descriptions; and the above is sufficient to point out the class of symptoms to which are referred the *morbid appearances*, which it is our next province to describe. In discussing the inflammatory nature of *softening* of the brain, we have already given a sufficiently full account of this curious affection, to spare repetition. The *dura mater* is seldom injured but from fractures and concussions: in these instances it is found detached from the cranium at the points opposite to the injury, and covered with a thick or sanious pus. In apoplectic and other cases, where a general tendency of blood to the whole head obviously exists, the dura mater partakes in the consequences, and its vessels are found distended with blood. Vide M. Rochoux.

The læsions of the *arachnoid* itself, considered as a serous membrane, are, as we have already observed after M. Georget, much more rare than is supposed by many modern writers. This membrane sometimes contains, in the polished serous cavity between its two folds, a considerable quantity of watery fluid, while the membrane itself exhibits no decided marks of inflammation. This fluid is considered as the product of a mere exhalation. The arachnoid is rarely found to exhibit traces of inflammation throughout its whole extent; but, when a part of it becomes inflamed, it is injected, of a lively red colour, deprived of its polish, and studded with minute transparent granulations, which are only seen with facility by being held to the light, so as to make the membrane glisten. Over these is found a delicate coat of lymph, pus, or sero-purulent liquor. These are most frequently observed on the cerebral fold of the membrane. Frequently the coating can only be seen in the act of separating the two folds, by raising the dura mater, when it assumes a ropy appearance, but is in too small a quantity to be seen while lying on the membrane. The opacity of the arachnoid is never very considerable; and when it does exist, is frequently owing to the diseased condition of the cellular matter beneath it. In some cases, adhesions are found. Serous and purulent matters are frequently observed *under* the arachnoidea; but these, according to the principles we have assumed in a preceding page, are in the pia mater, not in the arachnoid. The same may be said of close adhesions between the arachnoid and brain. The arachnoid of the ventricles, when inflamed, be-

comes unequal and rugous, and furnishes a muddy sero-purulent fluid, like that produced by the pleura or peritoneum, under similar circumstances.

The *pia mater* is almost always changed in its appearance after inflammations of the brain. This is a necessary consequence of its office, which consists in conveying the blood-vessels over the surface, and allowing them to ramify. Its vessels are injected, and its cellular tissue frequently infiltrated with serum, and in some instances with blood. The serum, from its retention in the cellular texture, resembles a jelly in appearance; but the whole may escape through a single opening. In the same texture, are sometimes found small clots of blood, a dirty sero-purulent liquid, real pus, and, in some instances, a cheesy matter. In chronic disease, the membrane is liable to thicken; and it may become several lines in thickness. Adhesions of the pia mater to the brain, are by no means rare, and when raised, it is apt to tear off the cerebral surface, which is generally found softened at such points. It is more common to find the pia mater inflamed throughout its whole extent, than the arachnoidea.

On the morbid alterations of the brain itself, we have already anticipated a large share of what we might have deferred to this place. In general inflammation of the brain, the vessels are distended, the cineritious matter is rose-coloured or deep red, and the medullary, marbled or violet-coloured. When sliced in the ordinary manner, the inflamed brain presents a large number of minute, red points, which are the sections of capillary arteries and veins, and the appearance of which has given rise to the French expression, "sablée de sang," *sanded with blood.* In local encephalitis, of a higher grade than that we have just described, we at once encounter the appearances enumerated in that part of this review, which is devoted to *softening of the brain;* to which, therefore, the reader is referred.

Abscesses are not uncommon in the brain. The pus is often mixed with the cerebral matter, but, nevertheless, is more distinct than in the white softening described above. In other cases, in which the disease seems to be farther advanced, the pus is collected in a cavity; sometimes in several small ones. It is very often of the appearance which is called laudable; at other times, thin and fetid, or yellowish and serous. The parietes of the

cavity, in the more recent cases, are ragged, and softened; but in more advanced abscesses, they are found lined with an albuminous coat, which subsequently becomes organized, and they are then said to be encysted. M. LALLEMAND devotes 200 pages respectively, to recent and to encysted abscesses.

The pia mater, and sometimes the arachnoid, occasionally form one of the parietes of a cerebral abscess. In numerous instances, many of which are collected by M. ITARD, abscesses of the brain have evacuated their contents by the ear; and at other times, by the nose, or orbit of the eye. Of course, in these cases, a caries or necrosis of the corresponding bone must have previously taken place. *Ulcerations* are not unfrequently found in the brain: they have been chiefly noticed in cases of sanguine apoplexy, and referred to the pressure of the blood; but they can exist independently of the agency of this cause, and are often distinctly referrible to inflammatory symptoms. They are observed most commonly in the corpora striata and thalami, and on the surface of the convolutions.

Hardening of the brain, as an effect of recent inflammation, we have already mentioned.

Induration from chronic disease is as yet not well understood. In hemiplegic idiots, one entire hemisphere is sometimes shrunk, hardened at the centre, and softened in many places. The parietes of old abscesses, and of apoplectic cavities, are not unfrequently increased in density. Sometimes there is an atrophy of several convolutions, with a yellowish tinge, and a remarkable increase of hardness. M. DELAYE, of the Salpetriere, has found, in the brains of those who had been for a long time affected with insanity, a portion of the cineritious matter easily divisible into two coats, of which the inner was softened, and the outer hardened. The younger PINEL has observed the medullary matter as hard as the white of a boiled egg, and sometimes of such a texture, as to produce a creaking sound when cut. He found no enlargement of vessels in the parts thus affected.

Cicatrices have been observed by M. SERRES, which, in his judgment, resulted from abscesses. They have been supposed by others to be the remains of apoplectic caverns, which are far more common. It is, in fact, very difficult for a patient to survive an encephalitis of sufficient duration to form a cicatrix.

Prognosis.—Encephalitis, as described by the writers from whom we have compiled the above details, is a very fatal, and almost hopeless disease. It produces most of the cases, which we commonly know under the character of incurable palsies, epilepsies, and dementiæ, or idiocies not congenital. In fact, it could hardly be otherwise, as all the descriptions are taken from mortal instances. Hence the great importance, to which we have already alluded, of watching, and early attending to, the first symptoms of the approach of these alarming disorders. It is highly probable, that, in the very numerous cases, in which a few of the milder symptoms among those enumerated, have occurred, there has really existed encephalitis of a moderate grade, and capable, as experience would then demonstrate, of being easily cured. The existence of mild attacks, and the approach of severe ones, may, we think, be easily recognized by a knowledge of the symptoms which we have already enumerated; and we have, therefore, spared our readers the tedium of a list of prodromi, which consist merely of the same phenomena, apparent in a less degree, or of certain general and familiar indications, which seem to portend disease of any kind within the cavity of the cranium.

If we apply this doctrine to fevers, according to the opinions avowed, in general terms, by the moderate school to which we have alluded, we shall find the prognosis vary indefinitely, from a mild fever with headach, to the most terrific and uncontrollable form. Here, indeed, our pathological friends appear to us somewhat defective. After first endeavouring to show that what is called fever is often really but an encephalitis, or some other affection of the brain, they content themselves with describing those more violent forms of cerebral disease, which furnish, by their very fatality, the means of dissections, and leave us to draw, in the best manner we are able, the corresponding inferences with respect to the more frequent and curable cases.

Recovery, in the severe cases, is often only partial; and great and peculiarly melancholy defects are very frequently visible in the understandings of those whose lives are saved from this distressing disease. The precious medulla of the brain has its powers but imperfectly restored by the cicatrices, and lateral anastomoses, which then form a part of its means of communication.

Treatment.—The celebrated Broussais, and his school, have taught us, that whatever form disease of the brain may assume, it is almost always in reality the same malady, to wit, irritation, and must be treated in the same manner. Without subscribing to this doctrine, we have thought, as is well expressed by M. Georget, that the diagnosis is often of but little value as regards the treatment. When severe symptoms of undue "determination of blood to the head" exist, every experienced practitioner will feel that the physician but badly fills his post, who waits for symptoms to declare to what nosological department the disorder is to be referred. The medical attendant is bound to act with decision and despatch, and leave diagnosis for leisure. It is only, then, for the purpose of predicting the future, that this study is valuable; nor is this unimportant. We have inserted in an earlier part of this review, what we had time and space sufficient to say further upon the means of distinguishing these diseases.

When once a disease is distinctly recognized as inflammatory, and there is no doubt or contraindication, its treatment generally becomes a thing extremely simple and intelligible. If we believe, however, that such an affection has been mistaken, in thousands of cases, for malignity, debility, a typhus tendency, ataxy, &c. &c., we may well suppose that errors, both numerous, and important in their injurious consequences, must have been the result. The collections of narratives by MM. Rochoux, Lallemand, Parent, Martinet, and Bouillaud, exhibit abundant evidence on this point. We there see the history of a great variety of cases of fatal encephalitis, which had been treated by tartar emetic, bark, camphor, musk, ether, &c. &c., and in which the symptoms are frequently recorded as having been exasperated immediately on the adoption of such practice. The more correct procedure is to be sought among a description of men, who have been long accustomed to rely upon the evidence of facts submitted to their senses, without recourse to arbitrary hypotheses, or mystical assumptions of occult causes. We allude here to the surgeons, by whom inflammation of the brain is distinctly recognized, when arising from accidents and operations, and effectually treated; and whose efforts, in many instances, have been crowned by the most extraordinary success. Their treatment consists simply in powerful depletion. Equal success does not seem to be

obtained in the management of inflammations of the brain from other causes by any methodus medendi; and we have already stated that strongly marked local encephalitis is almost always fatal.

The best success (that is, where palsy, permanent contraction, and convulsions had come on) seems to have followed the use of free bleedings, and the application of leeches and ice to the head, of sinapisms to the feet, and of boiling water to the legs and thighs. We are here quoting, (as indeed we have almost exclusively done throughout this paper,) from the French alone; and we hear neither the praise nor blame of calomel. An English or American practitioner would know the value of this additional remedy; a remedy, concerning which it at least admits of a question, whether its possession does not exceed in value all that can be achieved by the utmost delicacy of Gallic diagnosis. Practical directions for the use of these means, and instructions under what circumstances to withhold them, are matters which we will not intrude upon the experienced practitioner; while to him whose eye is not familiar with disease, they would be insufficient. None, indeed, know better than our well informed countrymen, that it is impossible to make a physician by the aid of books alone.

B. H. C.

MEDICAL LITERATURE.

RETROSPECTIVE REVIEW.

ARTICLE XII.—*Medicina Gymnastica; or a Treatise concerning the Power of Exercise with respect to the Animal Economy; and the great necessity of it in the cure of Several Distempers.* By FRANCIS FULLER, A. M. Sixth edition. London. 1728. pp. 271. 8vo.

IT has sometimes been a matter of astonishment, that the ancients carried their fondness for gymnastic exercises to such an extent as is manifest, as well from their written works, which have come down to our times, as from the remains of the vast buildings, which may be regarded as monuments raised to gymnastic courage and skill.

No body supposes that the brilliant assemblages on the turf of New-Market, or Long-Island, are moved by the sole desire of perfecting, by their presence and patronage, the beauty, strength, and speed of that noble animal the horse; nor will any one believe, notwithstanding what has been said thereon, that the grave and magnificent exhibitions of the olympic games, were intended to augment the personal courage, and bodily strength, of the people of ancient Greece, irrespective of other considerations than the application of these qualities to the national defence. IPHITUS, the founder or restorer of the games, probably cared less for the muscular development of some Crotonian Milo, or the blended triumph of victory and filial piety in the family of DIAGORAS the Rhodian, than for those higher and nobler political connexions which resulted from his extraordinary institution.

Though the design of IPHITUS was to establish a neutral ground, on which the conflicting interests of Greece might be soberly discussed, yet, as the olive chaplet won in a contest which all Greece assembled to behold, would naturally stimulate many of her citizens to cultivate assiduously such qualities as might render a victory probable, or even possible, fashion would make popular

all those physical exertions, the highest proficiency in which gave not only something of sacredness to the character of the living victor, but insured a posthumous immortality.

Hence, in view merely of the distinction which awaited the olympic victor, we may cease to wonder at the general extension, among the ancients, of the gymnastic arts; or even to be astonished at the excess to which they were carried; at the enormous expenditure incurred in erecting temples, baths, statues; the profligate waste of time; the barbarous immolations, whether of the ceastus and pancratium at first, or the more demoniacal butcheries of those ultra *amateurs du spectacle*, who seem to have conquered mankind, that they might offer up their blood in the arena, and to have sought out all savage, strange, and monstrous beasts, that they might glut an incomprehensible appetite for cruelty.

Such was the force of fashion, and so pervading the love of the gymnastic art, that, in the Augustan age, and downwards in the empire, almost all persons of fashion and rank seem to have subjected themselves to a most rigid observance of its rules.

"Tout le monde," says Le Clerc, "etait si fort convaincu de l'utilité qu'on en retiroit, ou du plaisir que cela faisoit, qu'il y avoit une infinité de gens qui passoient la plus grande partie de leur vie, dans les lieux propres pour s'exercer, qu'on batit depuis dans toutes les villes de la Grèce, d'où cette coutume se repandit ensuite ailleurs." Hist. de la Med. p. 108.

Probably a still greater attention was devoted to the subject in Rome. Independent of the rules which Pliny relates as being methodically followed by himself, and of the Sanctorian accuracy in regard to his health, told us of Spurinna, we may satisfy ourselves as to the extent of the fashion, by reading what Seneca says in his fifteenth epistle.

"Stulta enim est mi Lucili, et minime conveniens literato viro, occupatio exercendi lacertos, et dilatandi cervicem, ac latera firmandi; cum tibi fœliciter sagina cesserit, et thori creverent, nec eres unquam opimi boris, nec pondus æquabis."

Seneca would not have given such advice, if the reproach had had no foundation in the common practice of the best classes of society, the literary men.

But, in thus alluding to the criminal excesses to which the gymnastic art was carried, and of which it was no more guilty,

than christianity is guilty of the blood which has been shed under its name and authority, we would not excite feelings of abhorrence against the art itself. There is no doubt, that many of the wealthy and learned people of Rome promoted, in a high degree, both their corporeal and intellectual vigour, by attention to the bodily frame. The convenient and elegant porticoes and baths, the sunny exposures and shady retreats of Tusculum, must have sharpened the appetites as well as the wit of its polished inhabitants; and the truth is, that we are not more apt to look back to those times for examples of physical perfection, than for the best models of literary compositions, whether regarded in their aspect of solid worth, or elegance of style and finish.

How old is the adage, *mens sana in corpore sano*, and yet how common the idea that literary attainments are mostly found in the shrivelled pallid constructions of a VOLTAIRE and POPE, rather than in a plump rotund HORATIUS FLACCUS, or a portly GIBBON. We are far from believing that the gigantic strength of a Sampson, or Maximin, makes any probability of intellectual acuteness and vigour; but we do believe, that the healthy and normal state of the physical functions, concurs most fully with that intellectual strength and aptness, which is equally remote from feebleness on the one hand, and a morbid and factitious energy on the other.

A gradual declension of the popular attention to gymnastics, took place with the decline of the Roman empire. The ceastus and the net were supplanted by the lance and the battle-axe of the knight. The gymnasiarch gave place to the herald, whose listed field supplied the place of more costly structures. Tournaments and jousts were for men of gentle blood, and consequently not calculated to call forth, among the mass of the people, a disposition to cultivate the skill so admirably exhibited by their masters. These again gave way before the tremendous force of gunpowder, to which the hauberk and mail, the axe and spear, were worse than useless opponents. Thus has it happened, that an institution which occupied at one time a predominant influence over civilized society, fell gradually down; until in this enlightened age, mankind have learned to content themselves with the feats of the turf, the ring, and the circus.

We have said nothing of gymnastic medicine, and indeed we have little to say on the subject specially so considered. The

name of Herodicus, founder of the gymnastic sect, is known to us as that of a physician, who owned an academy where young persons repaired to exercise themselves. Observing that his pupils enjoyed very fine health and great bodily vigour, he conceived the idea of treating diseases by means of the bodily exertion of the patient, whereupon he formed a code of rules, adapted to different kinds of exercise, in different persons, diseases, climates, &c. He even attempted the cure of fevers, by causing his patients to exercise in walking, &c. To some he recommended a walk from Athens to Megara; where having touched the walls of the city, they were to turn and retrace their steps immediately; the whole distance being more than forty miles. The sect of Herodicus continued to flourish many years after his death, and the remnants of its doctrines are occasionally visible to the present day, as for example in the present article, which it is desired might urge the subject upwards to the view of the profession, as worthy of being regarded as an important arm of the therapeutical power.

We are indebted to Mercurialis, for a most elaborate account* of all the gymnastic acts, contained in a small, but exceedingly dull quarto, not more than half of which could we ever bring ourselves to peruse. We mention it, however, as matter of reference.

We would not have it inferred, that no attention has been bestowed on this topic, since the days of Asclepiades, by the medical profession; inasmuch as Sydenham, our Francis Fuller, and Cheyne, in England, and Dr. Rush in this country, have urged the advantages of exercise with all the zeal of a true and fervent belief in its virtues. We ought not, in justice, to overlook the strong commendations of it, in Dr. Johnson's late publication on morbid sensibility of the stomach and bowels. It is certainly time that physicians should take heed to what these persons have said.

No doubt commonly exists as to the utter futility of the common in-door practice in pulmonary consumption. Under the idea that it must be treated by antiphlogistics, as if it were an acute inflammation, multitudes of victims have been suffered to perish, who, had they been constantly on horseback, might, as our

* De Arte Gymnastica.

Francis Fuller expresseth it, have taken their lives as a prey. Sydenham asserts,

"But the best remedy hitherto discovered in this case, is riding sufficiently long journies on horseback, provided this exercise be long enough continued: observing that the middle aged must persist in it much longer than children, or young persons. For, in reality, the Peruvian bark is not more certainly curative of an intermittent fever, than riding is of a consumption at this time of life."

So many examples are on record of persons who have escaped entirely, or at least for a long time, the usual slow and miserable death of the consumptive, by a careful adoption of rules of exercise, that it seems not a little surprising, we do not fly to it as a common remedy, whenever our patients can be persuaded to avail themselves of its hopes and promises.

We will take the liberty to quote in this place, the remarks made by Dr. Rush in the beginning of his valuable essay on consumption, even at the risk of being very common-place: they cannot be too much remembered and repeated.

1. "It is unknown among the Indians of North America. 2. It is scarcely known by those citizens of the United States who live in the first stages of civilized life. The principal occupations of the Indians consist in war, fishing, and hunting. Those of the first settlers are fishing and hunting, and the laborious employments of subduing the earth, cutting down forests, building a house and barn, and distant excursions in all kinds of weather, to mills and courts, all which tend to excite, and preserve in the system, something like the Indian vigour of constitution. 3. It is less common in country places than in cities, and increases in both, with intemperance and sedentary modes of life. 4. Ship and house-carpenters, smiths, and all those artificers whose business requires great exertions of strength in the open air, in all seasons of the year, are less subject to this disease than men who work under cover, and at occupations which do not require the constant action of their limbs. 5. Women, who sit more than men, and whose work is connected with less exertion, are most subject to the consumption."*

Dr. Rush concludes from the above, that the

"Most probable means of curing the consumption, is to revive in the constitution, by means of exercise or labour, that vigour which belongs to the Indians, or to mankind in their first stage of civilization."

He cites many examples of *cures* effected by exercise, and of cases suspended by the same means; and it is within every body's

* Rush's Inquiries, II. 37.

knowledge, that the condition of the patient is generally meliorated, by abandoning an inactive mode of life. I visited a patient in the year 1817, who had just sustained a very large hæmorrhage from the lungs, which came on him when reduced to a debilitated state by cough, and sweats of long standing. He had every appearance of a man far gone in pulmonary consumption. He was a shoemaker. I told him, after the hæmorrhage had ceased, that as he was a young man, there was some hope of his restoration, provided he would adopt a different and active mode of life, one calculated to employ him much in the open air; but, that the pursuit of his present sedentary occupation, must preclude the hope of any complete restoration. He promised to follow my advice, although he had a small family, and knew not what resort to take immediately. I lost sight of him from that period, till the present spring, when I was stopped in the street by a cordial shake of the hand from a very robust, florid looking man, who soon explained that he was the same shoemaker whom I had last seen, weak and wan, and perishing, as I thought, with consumption. He informed me that he had immediately followed the advice I gave him, abandoned his last and bench, and engaged in a pursuit which kept him in the open air in all weathers: he had rapidly lost his cough, and suffered no other indisposition since. This case struck me as equally remarkable with that related to Dr. Rush, by the venerable Benjamin Franklin, see vol. II, p. 40 of his Inquiries; and I was not less pleased with the energy and determination of character, which caused this young man to abandon a calling in which he had been brought up and confirmed, than with the strong illustration which it afforded of the propriety of the active, and out-of-door method of controlling pulmonary consumption.

Patients generally, under circumstances like his, are unwilling to abandon old habits, or break up established connexions in business. Yet if the physician would be candid, and clear, in announcing his opinion, many such might, in all probability, be long preserved to their families, or wholly snatched from the jaws of imminent destruction.

Physicians err, we think, in being satisfied with the answer "I can't afford to go a journey, to buy a horse," &c. There are few decent persons, who, with a little additional exertion,

would not be able to compass a tolerable hack, and travel very comfortably in the cheap and healthy districts of the United States, or at least to engage in some active, and out-of-door pursuit.

We have no fear of inculcating a doctrine of dangerous tendency, in recommending exercise. The profession is too enlightened to fall into the error of HERODICUS. No man will commend to his patient in fever, a walk as long as that from Athens to Megara, and back again; but it does not follow, that, because he who is labouring under an acute pneumonia, or inflammation of the liver, is better in bed than on horseback, we should carelessly, as I know we do, lose sight of the advantages which, in many diseased states, we can derive from a careful gymnastic prescription, under which, by the mere recuperative energies of the system, more good is sometimes effected, than by all the resources of a whole druggery.

FRANCIS FULLER, the author of the work under consideration, very justly remarks,

"Internals do indeed make up the far greatest part of the means of cure, but yet there are considerable cases, where the very nature of the thing requires other methods; and this would appear very obvious, if it were not for our too partial consideration of the body of man, by attributing too much to the fluids, and too little to the solids; both of which, though they have a mutual dependence upon one another, yet have each of them, some properties, and if out of order, require something particular in the application, to restore them again."

"It is one thing to dispose nature to collect her own strength and throw off her enemy; and it is another to assist her by the *corpuscula*, the minute parts of a medicine, given inwards. The first way has regard to the whole animal economy; the second respects the blood and juices chiefly. The first may succeed where the second cannot; because here, the laws of motion, and the rules of the economy, are enforced, and brought to be assisting to a recovery of health, which in some few cases, can't be effected by a private and simple attempt upon the blood only." Preface.

Leaving out of the question, the humoral part of our author's pathology, the above cited passages contain very sensible remarks, which are capable of useful application in many circumstances.

Our author holds the following language in relation to the tone or tension of the parts.

"That I may explain what I mean by this tension or tone, it will be necessary to consider, first, how great a benefit we daily receive by only

changing the position of our bodies from an horizontal to an erect position, when we quit our beds, where in the time of sleep the body has been relaxed; and this will appear best by the ill consequences which follow upon a person's being confined by an accident to keep his bed for a few days; for such a one always finds upon his getting up again, that his spirits are disordered; he finds himself vertiginous in some measure, and a great deal weaker than he was before he betook himself to that posture. From whence it evidently appears, that standing or sitting, the familiar exercises (if I may so call 'em) of the most sedentary life, are absolutely requisite to keep up the balance on the part of the solids, even in a state of health, and that more violent exercises are as requisite to recover this balance when sunk by sickness. I know it may be objected here, that this observation is chiefly owing to the custom of changing the posture of the body alternately, in such a space of time, and that the breaking of that custom occasions those disorders; but this will not suffice, for an erect position is essential to the well being of the body of man: and if the infant was not, at such an age, brought to it by degrees by the nurse, though it might grow to the bulk of a man, and live many years, yet it would be a kind of bed-ridden creature; paralytic as to the use of its limbs, though with the sense of feeling, and much weaker internally, for want of that advantage which the fluids receive from the solids by this most familiar degree of tension, which we experience in standing, which posture has ever been esteemed as a tonic motion." p. 27.

Without laying upon our readers the burthen of studying out Francis Fuller's pathology of the animal spirits, which he seems to have comprehended quite as little, as the best of the physiologists of the present day, we shall proceed to select some passages that are characterized by a very good judgment, and close observation; which, as far as external or extrinsic changes in the system are concerned, the older writers made as well, or better, than the moderns, as any one may convince himself, by a very slight attention to the aphorisms or epidemics of Hippocrates, or the treatise of Celsus.

"How ridiculous would a man seem, who, when his physician had recommended some medicine to be taken to the quantity of a drachm, or of half a drachm, should go and take half an ounce of it, and then exclaim against the medicine that it disturbed him, and did him a great deal of mischief, and that he would never take it more; or if instead of taking it in a moderate quantity twice in a day for a considerable time, he should take that moderate quantity but once in two or three days, and then exclaim that the medicine was ineffectual? He that should act thus, would be thought to be but a very unreasonable person; and yet, after this manner most sick people set upon the use of exercise. You shall have a man ride fifteen or

twenty miles, when he should ride seven or eight, come home very tired, resolve never to be served so again, and so perfectly lay aside all hopes of any good from the more moderate use of that exercise. Another shall ride out five or six miles, once in two or three days, finds no great matter of relief, despairs of any success from that course, thinks it a trivial thing, a mere phancy, when the physician does not know what to do, and so he wholly leaves off too. Now allowing that moderate exercise to be a medium for the recovering of our health, that is a very unfair way of making use of it; for when once a distemper will not be driven out by any rough means, by purging and vomits, but we are obliged to come to alterative physic, the work must go on gradually, and that physic must be used without intermission. Now it would be as ridiculous for a man to expect that gentle drugs, or gentle means, should alter his constitution, if taken with great intervals, as it would be for a man to expect that the bulk of his body should keep up or increase, though he eat but once in two or three days; and whatever regard is due to internal alterative physic, the same is due to the moderate use of exercise; for by it, the secretions are equally promoted, and the subject matter of the disease brought to despume slowly. It is highly necessary that these means should be closely repeated with moderation, that nature may not be confounded and weakened, instead of being relieved; and without any regular intermission, lest the spring should run down again, lest the disease should have time to ruin, faster than the means of cure can build up." p. 47.

The author proceeds, at page 65, to treat of consumption; and here again we shall omit to go over some of his prefatory remarks on the pathology of this great scourge. There is something in the following quaint passage, which, however generally the sentiments contained in it may be known and admitted, will, nevertheless, be perused with pleasure and profit. Speaking of the use of balsamics, as applied to the management of consumption, he says,

"I could wish it was all hypothesis and fiction, and that these medicines would perform all that is expected from them; but then, to what must we attribute the ravages this disease (consumption) makes, which is known to all to be a melancholy truth? Not to the want of balsamics certainly, for both poor and rich can make shift to procure enough of them. The lozenge and linctus are in every body's hand; but this must be attributed to their leading people to take a wrong aim, to level at the symptom instead of the disease. These specious medicines induce them to be intent on the cure of that which is most troublesome, viz. the cough, when they should lay the axe to the root of the tree, be more intent on the cure of the habit of body, and not let it be overrun with a poisonous acrimony. I am confident, legions of the dead might have been above ground, if they had but conceived the fallacy of these means: if they had

but stuck close to the proper quantities of any one good alterative, they might have plunged out of their several maladies; but by placing all their hopes in things directed to the cough, they have failed like the dog, which bites at the stone that is thrown at him, instead of biting him which threw it; not knowing that such diligent plying of these medicines is a kind of embalming a man before his death; and an ill boding presage, that in a little time he will be in a condition to be embalmed after it." p. 79.

And is it not true to this day, that physicians are directing their efforts, (if they may be called efforts, which we make in the treatment of consumption,) to the suppression of the cough mainly? or if we may be said to do any thing more, that is attempted, with the certainty that it will prove unavailing, if the disease have already fastened itself on the vitals of the patient. We might ask, indeed, of what avail is the whole apparatus of drugs, of diet, and flannel, which is generally arrayed, as if past experience had afforded any guarantee of its utility. The answer is, none at all. Hence, our author, after a long relation of the effects of colts-foot, cynogloss, and liquorice, looks on such remedies as unfit to be trusted alone.

"Thus I have run up these arguments to a head. I have shown that the medicines appropriated to this case, ought to be very mild and temperate: upon the account of that less prevalent quality, there may be hazard lest they should not always prove equally effectual; and, therefore, to supply any such defect, I substitute a most easy natural gymnastic course, as a common aid to the weakness of the medicines, and an assistance to that part of the economy which those medicines cannot reach."

Riding on horseback, which was so much the favourite remedy of SYDENHAM, seems to be the exercise most approved by our author; and he closes the article on consumption, by referring to the use of horseback exercise, as follows:

"I might now proceed farther to consider in what degree of this distemper riding will be beneficial—whether any thing is to be expected from it in the second and last stage of it; but this would be to run out beyond my design of brevity: only, I shall take notice, that it is no rare thing to meet consumptions without any putrid fever, or any reason to believe an ulcer in the lungs, or perhaps so much as tubercles; but a continual hectic, and a precipitate waste of nature, by the direful acrimony and ill quality of the serum. In this case I cannot but be of opinion, that riding, well managed, would be serviceable, though undertook very late, if there is any tolerable measure of strength left to put it in practice."

"I must here again repeat, that when I shall speak of riding, I understand the habit of riding; the want of which distinctions has made it ineffectual to

many a man. He that in this distemper, above all others, rides for his health, must be like a Tartar, always on horseback; and then, from a weak condition he may come to the strength of a Tartar. He that would have his life for a prey, must hunt after it; and when once he finds his enemy give way, he must not leave off, but follow his blow, till he subdue him beyond a possibility of a return. He that carries this resolution with him, will, I doubt not, experience the happy effects of the good old direction, *Recipe Caballum:* he will find that the English pad is the most noble medium to be made use of for a recovery from a distemper, which we in this nation have but too much reason by way of eminence to style *English.*"

The power of exercise in bringing the human system to the highest pitch of strength and activity, has been often manifested in the training of the Athletæ of Great Britain, whether pedestrian or pugilist. The rules of the renowned Captain BARCLAY are thus stated in the Boxiana.

"The pedestrian, who may be supposed in tolerable condition, enters upon his training with a regular course of physic, which consists of three doses. Glauber's salts are generally preferred; and from one ounce and a half to two ounces are taken each time, with an interval of four days between each dose. After having gone through the course of physic, he commences his regular exercise, which is gradually increased as he proceeds in the training.

"When the object in view is the accomplishment of a pedestrian match, his regular exercise may be from twenty to twenty-four miles a day. He must rise at five in the morning, run half a mile at the top of his speed up hill; and then walk six miles at a moderate pace, coming in about seven to breakfast, which should consist of beef-steaks or mutton-chops under-done, with stale bread and old beer. After breakfast, he must again walk six miles at a moderate pace; and at twelve lie down in bed without his clothes for half an hour. On getting up, he must walk four miles, and return by four to dinner, which should also be beef-steaks or mutton-chops, with bread and beer as at breakfast. Immediately after dinner, he must resume his exercise, by running half a mile at the top of his speed, and walking six miles at a moderate pace. He takes no more exercise for that day, but retires to bed about eight, and next morning proceeds in the same manner.

"After having gone on in this regular course for three or four weeks, the *pedestrian* must take a four mile sweat, which is produced by running four miles, in flannel, at the top of his speed. Immediately on returning, a *hot liquor* is prescribed, in order to promote the perspiration, of which he must drink one English pint. It is termed the sweating liquor, and is composed of the following ingredients, viz: one ounce of caraway seed; half an ounce of coriander seed; one ounce of root liquorice; and half an ounce of sugar-candy; mixed with two bottles of cider, and boiled down to one-half. He

is then put to bed in his flannels, and being covered with six or eight pairs of blankets, and a feather bed, must remain in this state from twenty-five to thirty minutes, when he is taken out and rubbed perfectly dry. Being then well wrapt in his great coat, he walks out gently for two miles, and returns to breakfast; which, on such occasions, should consist of a roasted fowl. He afterwards proceeds with his usual exercise. These sweats are continued weekly, till within a few days of the performance of the match; or, in other words, he must undergo three or four of these operations. If the stomach of the pedestrian be foul, an emetic or two must be given, about a week before the conclusion of the training, and he is now supposed to be in the highest condition. Besides his usual or regular exercise, a person under training ought to employ himself, in the intervals, in every kind of exertion which tends to activity, such as cricket, bowls, throwing quoits, &c.; so that, during the whole day, both body and mind may be constantly occupied."

See also how a corpulent, pursy, thick winded animal, may be made to present in three months only, the tremendous strength, activity, and even composed courage of the far famed Tom Cribb; whose very aspect as he mounted the stage for the battle, caused Molineux's heart to sink within him. He was trained at Ury, by Capt. Barclay, after the following manner:

"The champion arrived at Ury, on the 7th of July of that year. He weighed sixteen stone; and from his mode of living in London, and the confinement of a crowded city, he had become corpulent, big-bellied, full of gross humours, and short breathed; and it was with difficulty he could walk ten miles. He first went through a course of physic, which consisted of three doses. For two weeks he walked about as he pleased; and generally traversed the woods and plantations with a fowling-piece in his hand. The *reports* of his musket resounded every where through the groves and the hollows of that delightful place, to the great *terror* of the magpies and wood-pigeons.

"After amusing himself in this way for about a fortnight, he then commenced his regular walking exercise, which at first was about ten or twelve miles a day. It was soon after increased to eighteen or twenty; and he ran regularly, morning and evening, a quarter of a mile at the top of his speed. In consequence of his physic and exercise, his weight was reduced, in the course of five weeks, from sixteen stone to fourteen and nine pounds. At this period he commenced his *sweats*, and took three during the month he remained at Ury afterwards; and his weight was gradually reduced to thirteen stone and five pounds, which was ascertained to be his *pitch* of condition, *as he could not reduce farther without weakening.*

"During the course of his training, the champion went twice to the Highlands, and took strong exercise. He walked to Mar Lodge, which is about

sixty miles distant from Ury, where he arrived to dinner on the second day; being now able to do thirty miles a day with ease, and probably he could have walked twice as far, if it had been necessary. He remained in the Highlands about a week each time, and amused himself with shooting. The principal advantage which he derived from these expeditions, was the severe exercise he was obliged to undergo in following Captain BARCLAY. He improved more in his strength and wind, by his journey to the Highlands, than by any other part of the training process. His diet and drink were the same as used in the pedestrian regimen; and, in other respects, the rules previously laid down were generally applied to him. That he was brought to the ultimate *pitch* of condition was evident, from the high state of health and strength in which he appeared, when he mounted the stage to contend with MOLINEUX; who has since confessed, that when he saw his fine condition, he totally despaired of gaining the battle.

"CRIBB was altogether about eleven weeks under training; but he remained only nine weeks at Ury. Besides his regular exercise, he was occasionally employed in sparring at Stonehaven, where he gave lessons in the pugilistic art. He was not allowed much rest, but was constantly occupied in some active employment. He enjoyed good spirits, being all the time fully convinced that he would beat his antagonist. He was managed, however, with great address; and the result corresponded with the wishes of his friends." BOXIANA.

We conceive that there is no necessity for us to offer an apology for citing CRIBB's training, in an article on exercise. Indeed, it contains such a fine exemplification of the power of exercise over the body, as to commend itself at once to our readers.

The next subject is dropsy; of which we do not intend to transfer much to our pages, as well on account of the long and erroneous pathological discussions in the article, as of the general inapplicability of exercise to the removal of that disease, notwithstanding what FULLER says in its favour. He uses much ingenuity in dissuading from the employment of purging medicines, to the exclusion of diuretics.

"There are none," says he, "will deny but diuretics are the most proper and natural remedies in this case, if they would always succeed, because directed to the proper emunctory the kidneys; and because they can go hand in hand with the corroborative medicines to be given at the same time. I take it for granted, therefore, that whenever purgatives are use in this case, it is because the diuretics do not take quick enough," &c. &c.

Again,

"The ill success of our diuretic method in this distemper, is very much owing to our giving those medicines in so small a quantity, and to our not

changing them for some of a quite different nature: when one sort used pertinaciously does not take, that the quantity must be increased, there needs no better argument than what is brought for the use of the purgers; for if the blood can dispense with the particles of a purgative, it will certainly bear a great quantity of those which are diuretics only. What wonders has that golden remedy of PYTHAGORAS done, the acetum scilliticum, when given to a proper quantity? and what may not be expected from the sal succini, which may be given in a dose large enough to irritate the fibres of the stomach; and in some measure supply the place of a gentle purge?" &c.

Our author also gives us an article on the hypochondriacal distemper, of which there are several sorts. We shall not, however, quote any of his remarks on this subject, but proceed to his article "Of the exercise of Riding."

"Upon several accounts," says he, "this may be esteemed the best and noblest of all exercises for a sick person, whether we consider it with respect to the body or mind. If we inquire after what manner it affects the body, we shall find that it is a kind of mixed exercise, partly active, and partly passive; the lower parts of the body being in some measure employed, while the upper parts are almost remiss or relaxed. Nay, where a man is easy, is sure of his horse, and rides loose, there is but very little action on his part; but he may give himself to be as careless, almost, as if he were on a moving chair, so that he may be said to be exercised, rather than to exercise himself; which makes the case widely different from almost all other sorts of exercise, as walking, running, stooping, or the like; all which require some labour, and consequently more strength for their performance; in all which the muscular parts must be put to some stress, and some of the secretory vessels be made to throw off too much, while others throw off too little: whereas in riding, the parts being incomparably more relaxed, there is a better disposition towards an equal secretion of the morbific particles, and a less expense of the animal spirits, the chief agents in all irregular secretions; so that a sick person may by this means be greatly relieved, and not tired; whereas by other more violent ones, it is possible he may be tired, and not relieved." p. 149.

"What relates to the breast I have had occasion to explain before; and for the head, though I cannot say it is so immediately affected by this exercise, as the lower belly is, yet there is one benefit accrues to it from riding, which, by reason of the disuse of exercise in cases of sickness, is not taken notice of; and it is this, the great inclination to sleep which a sick man finds if he lies down upon his bed as soon as he comes off his horse. For, as the motion of a coach does more or less dispose all people to sleep, and the swifter it goes, the more we are inclined to dose; so the motion of a horse being swifter, and the posture relaxed as to the head and upper parts, though a man does not perceive any thing of such an inclination while he is riding and upon his guard, without any thing to lean upon, yet

there is so much of the impression of that motion remaining upon him for sometime after he lights off his horse, that if he throws himself presently upon his bed, especially if he drinks some small draught of wholesome ale or wine first, he will quickly be in a sleep, which upon several accounts must then be very beneficial. This is a truth so certain and so valuable to distressed infirm people, whose nights are often more troublesome than the days, that it is wonderful what should keep men from attending to nature, and falling into such just measures that art itself cannot afford. What can be more applicable to all the circumstances of consumptive people, than after that by moderate riding they have disposed the humours for each secretion, they should by such short and refreshing sleeps complete those secretions? When moreover by these means they may be enabled to deny themselves those latter or morning sleeps, in which they are so apt to run into colliquations?" p. 158.

With equal zeal does our author praise and magnify the effects produced on the skin, and the capillary circulation in general, as shown in the

"Freshness of the countenance of those who use it, which lasts for some time, and will appear upon but once riding, and the weakest and most infirm person shall discover something of this in his cheeks after this exercise. Now I would fain know what noble cordial, whether solid or liquid, can do this? They may cause a flushing, but can produce nothing of this natural aspect; and what can more plainly discover to us that there is something inimitable, which results from the equal and gentle pressure of the innumerable and invisible vascula of the whole body together; and that that action which can produce such an appearance upon but one single application to it, may be sufficient to display the greatest and most wholesome effects, when continued on gradually, as it ought to be, &c."

Take also as a specimen of FULLER's love for the horse, the following part of a passage:

"He who designs to make his riding turn to account, must make it a pleasure. He must retire to some place where he can have the open field for his range; he must find out a horse that entirely suits his humour, and then it will not be easy for him not to delight in a creature, which will perform all he expects from him, that takes pleasure in what he is put upon, and delights in his rider; a creature which (considering the many other beasts that are serviceable for draught or burden) seems to be made almost only for the defence, the pleasure, and health of his master; and which has so many excellent qualities above all other beasts, that there is no man upon earth, whose gravity or dignity is so great as not to allow him with some pleasure to take notice of them, if the exercise alone will not satisfy, &c. &c."

The succeeding pages are mostly occupied with cases, exemplifying the beneficial effects of riding, walking, and other

exercise, &c., in diarrhœa, colic, consumption, &c. We shall not follow him through these cases, though they are very instructive and well told. He commences at page 196, his observations on chafing, and at page 209, the remarks "on being exercised to bear cold," followed, at 219, by a sketch of the "practice of the ancients," in which, after a glance at their various modes of proceeding, and the abolition of gymnastic arts in Europe, which he attributes to the Goths, he says,

"I am very sensible how difficult a thing it is with the best of arguments, to influence those who are propense to the contrary of what you propose. And we are so habituated to other methods and other expectations; have so many conveniences for support and palliation under a sickness, that most people are supinely content, rather to rub on in a sickly condition, that does not carry the greatest danger with it, than resolutely endeavour by vigorous means, to be quite delivered from it. And if it be a distemper that threatens immediate peril, these means are presently thought too trivial to have any weight in the cure, and people can with more ease despair of help, than struggle with pain, in hope of an uncertain cure; so that in some cases, it may be very well said of the wise, the rich, the valiant, and the mighty, as was formerly said of one of king David's generals, who, because he was killed upon a surprise, (which yet no human caution can always prevent,) was lamented with that severe *epicedium, died Abner as a fool dieth.*"

The volume is closed by an appendix containing a full and highly interesting detail of the recovery of the author, from a very long and distressing indisposition, by the use of exercise. This we shall not quote, on account of its too great length. In bringing this article to a conclusion, we must again express our regret, that modern manners and customs have retained so little of that habitual attention to cultivate, by exercise, the health and perfection of the body.

In Germany and in England, much attention is now paid to the subject in schools, and it is not wholly without friends in the United States; since, at least, two very considerable establishments are now in the practice of a regulated and prescribed gymnastic instruction.

We all know what vast speed may be produced in the horse by constant attention to exercise and feeding, and we may infer that men of feeble and delicate constitutions, might also be brought, by well directed means, to the attainment of great, or at least sufficient bodily health and vigour. Sir John Malcolm relates in

the 1st vol. of his History of Persia, the following anecdote, which may not be malapropos to the matter in hand.

"Baharam, proud of his excellence as an archer, wished to exhibit before one of his favourite ladies. He carried her to the plain, and an antelope was soon found, asleep. The monarch shot an arrow with such precision, as to graze its ear. The animal awoke, and put his hind hoof to the ear to strike off the fly, by which he conceived himself annoyed. Another arrow from the royal bow, fixed his hoof to his horn. The exulting Baharam turned to the lady, in expectation of her warm praises; she coolly observed, *Neeko kurden z pur kurden est;* that is, 'practice makes perfect.' Enraged at this uncourtly observation, the king instantly ordered her to be sent into the mountains to perish. Her life was saved by the mercy of a minister, who allowed her to retire to a small village on the side of a hill. She there lodged in an upper room, to which she ascended by twenty steps. Immediately after her arrival, she bought a small calf, which she regularly carried up and down the flight every day. This exercise she continued four years; and the improvement of her strength kept pace with the increasing weight of the animal. Baharam, who had supposed his favourite dead, happened, after a fatiguing chase, to stop one evening at this village. He saw a young woman carrying a large cow up a flight of twenty steps. He was astonished, and sent to inquire, how strength so extraordinary had been acquired by a person of so apparently delicate a form. The lady said, she would communicate her secret to none but Baharam, and to him only, on condition of his coming alone to her house. The monarch instantly went; and on his repeating his admiration at what he had seen, she bid him not lavish praises where they were not due: 'practice makes perfect,' said the lady in her natural voice, and at the same time lifted her veil. The monarch recognized and embraced his favourite." p. 119.

BIBLIOGRAPHICAL NOTICES.

ARTICLE XIII.—*De la Saignée et du Kinkina dans le Traitement de la Fièvre Jaune.* Par PIERRE LEFORT, Médecin du Roi. "Quam sit dispar exitus." Martinique, 1826, pp. 67.

DR. LEFORT is already advantageously known to the medical world, by his essay on the causes and nature of yellow fever, and the experiments performed on himself and friends, to disprove the belief in the contagious character of that disease. On the present occasion he investigates the comparative merits of two very opposite methods of treating the yellow fever, viz. by the administration of Peruvian bark, and by bleeding; and as the result of his reasonings *a priori* from the symptoms of the malady, and of observations on the changes found after death, as well as of his own experience, he is led to give a decided preference to direct depletion in the first stage, and revulsion in the second, over the stimulating and tonic practice.

The greater part of his pamphlet is taken up with critical remarks on the opinions of M. GUYON, who seems to have written with the two-fold view of bringing the new or physiological school of physicians into disrepute, and of sounding the praises of the bark, given alone or combined with opium. This gentleman furnishes us, as a contrast no doubt to the obscurities of the organists or physiologists, with a poetical exposition of the nature of yellow fever. He represents it as a being *separated* from matter, as an *evil* spirit diffused through the system, without affecting any organ in particular: it is, according to him, a malignant fever, which has its seat nowhere: it is an alteration, a profound injury of the vital principle, of the power which presides over life. Many physicians have been most excellent and captivating poets, and we see no objection to the members of our profession occasionally wooing the muses; but we must at the same time insist on a frank acknowledgment of their purpose, and on their affixing the true title to their works; so that we shall not have inflicted on us the prodigal use of the prosopopœia in what is professedly the history of a disease. On this ground we join Dr. LEFORT, in objecting to the figurative strains of M. GUYON, or of any other medical man, who shall describe a fever as if a spectre, known only by its shadowy outlines, and made to represent whatever ear or fancy may suggest. The following conjecture is not less exceptionable: Perhaps, says M GUYON, our expectations of the method of treatment, best adapted to yellow fever, must be realized less by extensive knowledge than great *temerity*. This is, indeed, as our author remarks,

justification of the satire on the physician, who is represented as blindfold, and striking at random, without knowing whether he shall drive away the disease or kill the patient. "There is not, there cannot be successful rashness in medicine, unless by chance, and as exceptions."

Confounding the fevers of a periodical character with yellow fever, the stimuli—bark, wine, punch, useful in many cases of the former, are extolled as efficacious in the latter. Hence, M. Guyon tells us, that generous wines, administered to the extent of producing a certain degree of intoxication, act in the same way as opium, that is, by retarding the progress of the disease. Nature and the patient are here opposed to false theory. Persons attacked with yellow fever, have an extreme aversion to all kinds of wine. So general is this feeling, that out of thousands of soldiers treated for the disease, during the period of eight years at the hospital of Fort Royal, the author has met with hardly twenty exceptions. Opium, according to the physician who advocates the use of wine, retards the progress of the disease by blunting the sensibility; and hence may, he thinks, be advantageously united to other means. On the other hand, we learn, that neither alone, nor in union with calomel, as recommended by the English practitioners, was it productive of any benefit in the hands of Dr. Lefort, who adds, that a suitable and continued use of the antiphlogistic remedies much more certainly removed wakefulness, by calming the irritation and pain of which it is the effect. We wish this remark to be steadily borne in mind by our medical brethren of the United States, when they are called upon to procure sleep and repose in autumnal fevers, marked by much gastric and cerebral excitement.

The cold bath, recommended by M. Guyon as a means of abstracting the morbid heat in the disease under consideration, is not approved of by our author, who expresses his partiality for tepid bathing and ablution, as a practice which, under such circumstances, he has found very beneficial.

In reply to the objections made against bloodletting, on the score of its having no direct or certain tendency to save life, but, on the contrary, of its retarding convalescence and accelerating the termination of fatal cases, Dr. Lefort makes the following very apposite remarks:

"But those physicians who have invariably considered bleeding necessary for the treatment of yellow fever, have not been at sufficient pains to determine the time in which it ought to be performed in order to be useful, and the limits beyond which it may prove injurious. It is to this neglect unquestionably, that we must attribute the want of success from this grand agent in a number of cases, and for the same cause, and owing to lack of discernment, do we find it taxed with hastening the fatal termination of the disease.

Dr. Rochoux, who was sensible of the indispensable necessity of venesection in the treatment of yellow fever, is, as far as we know, the first who has designated with precision the period of time in which we may have re-

course to the operation. This, according to him, is during the first sixty hours of the disease; and this time elapsed, it is too late to resort to general bleeding."

As corroborative of the correctness of this opinion, our author gives an extract from a letter written by him to Dr. KERAUDREN, in September, 1818, three years before the publication by Dr. ROCHOUX, entitled *Recherches sur la Fievre Jaune*.

"If I was able to bleed immediately after the accession, once, twice, and even three times, four out of five patients recovered; the disease was at its crisis on the second or third day, and convalescence, which was never long, began on the fourth or fifth. Bleeding, practised on the day after the invasion, presents six times less chance of success; and in general, it is too late to have recourse to it on the third and fourth day."

Eight years of practice and experience, continues the author, have continually confirmed the truth of this observation; and this truth is now fully evident to us, and will hereafter become so to the young physicians who shall be required to treat yellow fever, and who will not bring with them any prejudices in the study of the disease.

There is always an exuberance of life in those attacked by yellow fever, on their arrival in the colonies and a short time afterwards. Their blood is thick, and rich in colouring matter and fibrin, and without serosity. The coagulum is moulded after the form of the vessel in which the blood is drawn, and adheres strongly to it: in appearance it resembles a piece of *scarlet* ice. Those who sink under the disease in a few days, have the flesh firm and red, and *never* exhibit any sign of putrefaction, or taint; and never exhale, even a long time after death, any kind of bad smell. From these we must except the rarer cases, in which the disease lingers on two, three, and even five weeks; then the corpse is speedily decomposed.

The languor and prostration manifested at times from the very commencement of an attack of yellow fever, are *always* the effect of the pain and irritation of one or several viscera, and not of a real debility of the system generally. How can we in reason suppose such weakness in men, who, but a few minutes before, were in the enjoyment of all their strength and vital energies? The physiological analysis of the functions, and even the prompt relief instantaneously procured by large bleedings, cannot leave any doubt on this head.

M. GUYON is compelled to admit the fact, that bleeding "*calms the symptoms which constitute the first stage of yellow fever:* that is to say, it calms the pain and irritation which are at this time the symptoms. Now, to quiet the pain and irritation, is to husband the strength of the patient; since great or long continued pain and irritation have the assured effect of exhausting and destroying his strength. Hence, the sick who were overpowered by the excess of pain and extreme languor on the first invasion of the disease, felt themselves light and active after a more or less abundant sanguineous

evacuation. To diminish action, when in excess and deranging the order of the functions, is not then lessening life; but, on the contrary, economizing it by removing an obstacle, which, allowed to remain, would finally extinguish it.

But, besides this, it is not by studying strength and feebleness in a general manner, as *two beings* equally diffused through the animal economy, and dividing between them all diseases, that we can flatter ourselves with being able to treat them in a suitable manner. There is something else in disease; there is an aberration, fixation, concentration of the powers on one or several organs, to the detriment of the other parts of the body: this is more especially the case in yellow fever, as we discover by the autopsia of those who sink under it. Hence the necessity of recourse to revulsives and derivatives, which, next to bleeding, are the most powerful means of combating the yellow fever." p. 40—2.

Under the head of revulsives, Dr. LEFORT first indicates dry cupping and blisters to the epigastrium, and vesicating or ammoniacal plasters to the thighs, legs, and *nucha*, to be had recourse to at the expiration of the first, and during the second period. In the comatose state, the actual cautery, either to the *nucha* or *sinciput*, or to both, is recommended. The most alarming symptom in this second period, when the pulse is small and fluttering, and without there being any heat or pain, is the vomiting of even the blandest drinks. Here the quinine, (he means the sulphate of quinine,) is extolled by our author as a remedy every way entitled to consideration; and one to which he is indebted for many cures: he gave it in doses of from two to three grains, three or four times during the twenty-four hours. Its use ought to be persevered in for two or three days. As a useful auxiliary to, or alternating with the quinine, he recommends the carbonated water in doses of two or three ounces, repeated every two or three hours, either alone or with syrup. The use of frictions is much insisted on during the whole course of the disease; either of the entire body with lemon juice, or of the pained limbs by a saponaceous opiate liniment. Cupping and scarifying, or the ammoniacal plaster, are especially useful in removing the pains of the lumbar regions.

Our author mentions, in a letter to his friend DUVEAU detailing his method of treatment, that he saves about two-thirds of those attacked with yellow fever; and adds, that, if called in time, that is at the invasion of the disease, he could cure five-sixths of the entire number. DUVEAU, in a letter to him, states the mortality in his practice to be one in five; that is to say, out of one hundred and ten military attacked with yellow fever, *twenty* died. The opinions and practice of such physicians are worthy of our attentive and respectful consideration, even though they may not be received throughout as models for adoption and imitation.

ARTICLE XIV.—*Exposé des divers procédés employés jusqu'a ce jour pour guerir de la Pierre, sans avoir recours a l'opération de la Taille.* Par J. LEROY, (d'Etiolle) D. M. 8vo. pp. 232. Paris, 1825.

A History of the various Methods hitherto employed for the cure of Calculus, without resorting to Lithotomy. By J. LEROY, 1825.

THE chief design of the author of this work is to vindicate his own right of priority in suggesting the idea of breaking up a calculus in the bladder, and devising and employing suitable instruments for the attainment of this object, and for extracting the fragments of stone from this viscus. The whole merit of this lithontriptic process, it is well known, has been awarded to M. CIVIALE, who certainly first performed it on the living subject, and has operated more frequently and more successfully than any of his rivals, whatever may have been his original merit.* To us, this dispute is of no importance, further than the love of justice would induce us to render to each his own credit; a question to be decided only by their compatriots. The work of M. LEROY is, however, by no means confined to the object alluded to, but presents us with an interesting and valuable history of the most important medical, as well as surgical lithontriptics. Many of these, being comparatively little known to the profession in this country, we shall briefly notice, regretting that we cannot at present republish the interesting plates of lithontriptic instruments which accompany this volume.

In the diagnosis of calculus, as well as in its treatment by the new methods, the use of the straight catheter or sound is of importance. LITTAUD appears to have suggested the possibility of using a straight instrument in 1769: in his Précis de Médecine Practique, t. I, p. 648, he says, "I know of no case, except where a stone is engaged in the urethra, which would prevent a skilful hand, conducting a straight instrument into the bladder." This suggestion was unheeded by the profession, and in 1810, it was again incidentally mentioned by M. MONTAIGU, in a thesis published at Paris. It remained for a Bavarian surgeon, M. GRUITHUISEN, to demonstrate publicly the practicability of this operation, and to deduce from it most of the practical applications of which it is susceptible. He published his account in 1813, in the Gazette of Saltzbourgh; but, according to our author, this discovery was feebly heard amid the thunder of European wars, and it remained for M. AMUSSAT in 1822, to fix public attention on the practicability of employing straight instruments in the male subject. This fact is now conceded by experienced men, although we cannot yet credit the assertion, that straight instruments are more easy of introduction than the curved. p. 48.

Passing over the diagnostic measures, more or less familiar to us all, we

* Vide vol. 2, p. 431 of this Journal for Civiale's statements.

come to the treatment of calculi, which M. LEROY divides under six heads. 1st. Lithontriptic remedies taken internally, conjoined with a suitable regimen. 2nd. Solvent injections into the bladder. 3rd. Solution by means of the voltaic battery. 4th. Extraction through the urethra with, or without dilatation of this canal. 5th. Mechanical division of the stone (lithontrity.) 6th. Lithotomy.

Under the first of these divisions, allusion is made to some of the old remedies for the stone, particularly to the celebrated remedy of Mrs. STEVENS, consisting principally of carbonate of lime, and cases of its occasional efficacy are adduced. The improvements of modern chemistry are noticed, and the important fact, that an acid condition of the urine, on which the formation of many calculi depends, can be altered or prevented by the internal use of alkaline medicines, is fully confirmed. Dr. COOPER, the learned president of South Carolina university, has proved that similar changes can be effected in the cutaneous secretions. As to the proper diet, simple vegetable food is proved to be the best. The observations and opinions of MAGENDIE, that articles free from azote, are best suited to prevent and to correct a calculous diathesis, are illustrated by cases, in which calculi disappeared under its employment, and returned when animal food and rich viands were resumed.

2nd. The idea of solvent injections into the bladder was probably first acted on by BARONIUS in 1614, and has since been tested in various ways, hitherto unsuccessfully. Chemical experiments on calculi out of the body, have evinced that most, if not all, can be destroyed. "It is no longer doubtful," say the able experimental chemists, FOURCROY and VAUQUELIN, "that chemistry, once assured of the intimate nature of the present kinds of human calculi, can furnish suitable solvents for each. These solvents can be reduced to three: potassa, in the form of lye, for calculi of uric acid and urate of ammonia; muriatic acid greatly diluted, for the ammoniaco-magnesian phosphates; and nitric acid equally diluted, for the mulberry calculi (muraux). The method of injection into the bladder, is the most certain method of effecting their solution; and in this, there appears to be no danger; for often have fluids more active and more acrid than these been injected; and the urine itself is often more irritating." These bright visions have not been realized; but there is some reason to hope, that the ingenuity of M. CIVIALE, of our author M. LEROY, of M. ROBINET and others, will yet triumph over the difficulties which have hitherto presented. These gentlemen report, that they can, by suitable instruments,* envelop the stone in the bladder, in a pouch so as to enclose it completely, and to admit of solvent injections being thrown into this pouch without escaping into the bladder. They say, that the *only desideratum* at present is to dis-

* A lithographic engraving of Leroy's instruments, ("Lithoprione à filet") accompanies the work under notice.

cover some material for this pouch which will not be acted on by the solvent; a discovery which the last-mentioned gentleman says he has made, and which he will develop as soon as he has collected a sufficient number of cases to ensure professional approbation.

Another suggestion has been made on this subject: "If mild fluids, introduced in small quantities, into the bladder for a limited time, have a marked effect on calculi there situated, solution must be much more rapid, when a continued current of the solvent flows into the bladder, and if, instead of a few ounces, several pints should be made to circulate in a short time." Influenced by this reasoning, HALES employed a double catheter; to the orifice of one tube, he connected the urethra of a bullock, which communicated with a reservoir of a solvent fluid, three feet above the instrument. The catheter was introduced into the bladder of a dog, and in four hours and a half, he caused three gallons of water at the temperature of the urine, to circulate through the bladder, the fluid entering by one channel, and returning by the other; and this without any inconvenience to the animal. M. GRUITHUISEN, our ingenious Bavarian surgeon, was the first to improve this idea of HALES, and has modified the instrument employed. (A plate of this last is given.) M. GRUITHUISEN, believing that the stone would be destroyed in this case, not only by the nature of the solvent, and its continued supply, but also by its impetus or momentum, proposed that the reservoir of fluid should be situated "on the roof of the house," to give a practical illustration, says our author, of OVID's observation,

> Quid magis est saxo durum? quid mollius unda?
> Dura tamen molli saxa cavantur aqua.

Care, however, must be taken, that irritation of the bladder be not induced. M. CLOQUET has also made many experiments, yet unpublished, on the effect of a continued stream of distilled water on stones in the bladder by means of the double catheter.

Subjecting calculi of a small size to the influence of a double current of some solvent fluid, may often answer, but for large stones, the process must be too tedious. "This practice," says M. LEROY, "should always be employed when the stone is adherent to the mucous membrane, or when it is contained in an incomplete cyst or pouch of the bladder, and when gravel and no calculus, is present. Finally, this plan is advantageous, after a stone has been broken in the bladder, to wash out the sandy particles, to diminish the fragments, and facilitate their discharge. Its employment is always free from pain and danger." p. 95, 96. M. MAGENDIE has in this way afforded relief to an Englishman 85 years old with an adherent calculus.

3rd. As soon as the power of galvanism was generally known, the idea was suggested, says our author, of employing its agency in dissolving calculi. He affirms that M. FOUVIER DESMORTIERS was the first who conceived and

expressed this hope, in his work on the nature and effects of the electric fluid, before the experiments of Sir H. Davy, on the decomposition of the alkalies and earths, were known.

The same idea was promulgated in this city, in the spring of 1812, by Dr. J. B. Sutherland, in his "Inaugural Dissertation on the Chemical Decomposition of Calculi by *the agency of Galvanism.*" In this essay, Dr. S. alludes to the brilliant experiments of Franklin, on the identity of lightning and electricity, and proposes the same agent for the decomposition of calculi in the human bladder, "that man may be cured of this complaint without a surgical operation." He proposed that conductors should be introduced into the bladder through cannulæ, that these conductors should be insulated, and so arranged as to operate simply upon the stone without injuring the bladder, by any direct or indirect agency. The first experiments, however, on this subject, appear to have been made by M. Gruithuisen in 1813. He isolated two platina wires from the opposite poles of a galvanic battery, by means either of tubes of glass, or else by a network of silk, covered with gum lac, and then glided the whole through a metallic cannula. He recommended that the extremities of the platina wires should not be separated more than is necessary to come in contact with the stone, as the galvanic action is more intense, as the conductors are approximated; care, however, being taken that they are not in contact, or so near as to permit the transmission of the fluid without affecting the stone. He observes that hardly any calculus can resist the influence of a voltaic pile of 300 pair; deep perforations are made in a few minutes, where the stone is in contact with the conductors. He advises, that if the stone be very hard, to employ six hundred to a thousand plates; "when the stone will dissolve like butter;" ("comme du beurre.")

Apparently ignorant of these experiments, MM. Prevost and Dumas, in 1823, conceived the same ideas, and extended the researches of the Bavarian surgeon. Their communication to the Academy of Sciences, may be seen in the Annales de Chimie et de Physique, for June and July 1823.

"It was necessary to determine first the influence of the pile on a calculus out of the body. They hence submitted a fusible calculus to the action of a pile of a hundred pair, which they excited every hour: the platina conductors which touched the calculus, were separated six or eight lines, and the whole was plunged in a vessel filled with pure water. In twelve hours, the stone, which originally weighed 92 grains, was reduced in weight to 80: after a further operation of sixteen hours, the whole mass was so friable that the slightest pressure reduced it to small grains, the largest fragment not exceeding the size of a lentil."

Anxious to ascertain, if a galvanic pile of the power above used, would not produce too great an irritation on the living bladder, MM. Dumas and Prevost fixed a fragment of a calculus between the extremities of the

conductors, and introduced it thus secured into the bladder of a dog. The current was established, and the animal supported the galvanic action for one hour without any indication of pain. The same experiment having been repeated for six days, the fragment became very friable and had lost much of its weight. These gentlemen have further satisfied themselves of the little risk of a pile of 120 to 130 pairs, by plunging the tongue in a liquid in which the conductors were immersed, in such a manner, that it was only fifteen to eighteen lines removed from them: this organ scarcely perceived the galvanic influence. They have undertaken also a course of experiments by introducing calculi into the bladder of animals, and then attempting their destruction by galvanism. The results are not yet made public. "The apparatus which they employed, is composed of a cannula of gum-elastic, which receives the two platina conductors, covered with silk through their whole length excepting their extremities, which, slightly separated from each other by a spring, are fixed on a button of ivory which closes the opening of the cannula. This button is formed of two halves of a sphere, fixed each to one of the conductors in such a manner, that their plain surface, where the platina is observed, shall come in contact with the stone." "MM. DUMAS and PREVOST, after many experiments, have discovered, that an injection of a solution of the nitrate of potassa renders the action of the pile more prompt than when water is injected. When also the calculus consists of pure lithic acid, it cannot be destroyed by the voltaic battery alone; because all the atoms, being of the same nature, are equally attracted to the same pole; but if they plunge the calculus into a solution of the nitrate of potassa, and bring it in contact with the conductors, the *salt* will be decomposed; but as the platina wire is in contact with the stone, the potassa, as it is liberated, will combine with the uric acid, with which it forms a soluble salt. This is a chemical theory, very simple at first view, but will these changes be similarly effected in the living bladder?" p. 102.

M. LEROY imagines, that the apparatus of DUMAS and PREVOST might be greatly improved; and he describes an instrument of his own devising, for enclosing the stone in a net of platina wire, that it may be perforated partially or completely by means of a drill, so that one conductor may be passed into this perforation, while the other is in contact with the surface of the stone. "The calculus, thus attacked at the centre and circumference, will be dissolved more promptly, and cannot escape from the influence of the pile, while the bladder will not be endangered by the galvanic fluid." The ingenuity, which has thus been displayed in these scientific attempts to obviate the necessity of lithotomy, deserves great praise, and affords an earnest of eventual success.

4th. Extraction of calculi through the urethra, even when they have been of large size, has occurred occasionally by the mere efforts of the patient. Examples are given, especially among females. Very often,

however, these bodies are arrested in the canal, causing a retention or incontinence of urine. To extract them, surgeons have employed small curettes, forceps of different construction, and a metallic noose. They have perforated the stone with a drill, and have resorted to suction at the extremity of the penis, either with the mouth, or with small syringes. These methods, assisted by warm baths and oily injections, have often prevented the necessity of incisions.

Mechanical dilatation of the urethra in the male, as well as in the female, has often been useful; but experience seems to restrict this practice to comparatively narrow limits, for *incontinence of urine* has often resulted from inordinate distention, and proved a miserable substitute even for the pains of a urinary calculus. This unpleasant result is said to occur less frequently when the dilatation is slowly accomplished.

Calculi have been extracted also directly from the bladder, by means of forceps, and other analogous instruments. Our author has given plates and descriptions of several ingenious devices of his own, which may, possibly, be successfully employed on the living subject.

5. The breaking up of the stone in the urethra and bladder, (*lithontritie,*) as already mentioned, is practicable, and often preferable to every other method of relief. The remainder of the work which we are briefly noticing, is occupied with the history of this operation, a description of the instruments, the manner of operating, and the circumstances, favourable or unfavourable, to its successful accomplishment.

Some obscure hints for breaking up the stone in the bladder, are to be found in the writings of SANCTORIUS, and of HALLER; but M. GRUITHUISEN is regarded as the first surgeon, who published an account of this operation, and of the necessary instruments, in the year 1813.

In 1819, Mr. ELDGERTON described, in the Edinburgh Medical Journal, a double cannula and a flat file for destroying the calculus in situ.

In April, 1822, AMUSSAT introduced *straight* cannulæ into the male bladder; and in the succeeding month, our author and M. AMUSSAT presented their respective lithontriptic instruments to the Academy of Surgery.

"Having the same end in view, our means, however, were somewhat different. M. AMUSSAT endeavoured to break the calculi by the strength of his instruments; I, to reduce them to powder by a process more tedious, but perhaps more certain." p. 137.

Descriptions of these instruments were immediately published in the medical journals; and it was not until a year afterwards, in 1823, that M. CIVIALE first operated successfully on the living subject, and secured to himself the whole credit of devising as well as executing this important operation. Such is the history of this operation, as presented by M. LEROY; and we would refer our readers, for the statement of his rival M. CIVIALE, to p. 431 of vol. ii. of this journal, acknowledging our own inability to de-

cide on their respective claims, as their statements as to facts differ materially.

As to the instruments and the manner of operating, recommended by M. Leroy, they are very similar to those of M. Civiale; and could not be understood without the assistance of plates. We shall, therefore, close our notice, by adverting to the various circumstances which forbid this new operation.

Infancy, which is peculiarly liable to calculous disorders, can seldom enjoy the benefits of the lithontriptic method, as the curvature of the urethra presents greater obstacles to the use of straight instruments; and there is, moreover, at that age, a want of patience and docility so necessary in an operation of this kind.

There are some individuals whose *sensibilities are so great*, that the simple introduction of a sound is insupportable, and would induce convulsions. There are also various diseases, general and local, which might forbid this operation, particularly affections of the urinary organs; viz, mal-formations, as a septum dividing the bladder into two cavities: a congenital cystocele, &c. &c. Hypospadia, (or the opening of the urethra on the under surface of the penis,) would generally prevent this operation, unless the opening existed in the perinœum, when the operation would be facilitated.

The existence of *calculi in the kidneys and ureters*, with one in the bladder, ought not to prevent lithontrity, but gives it, in fact, a superiority over lithotomy, as several operations become necessary.

Encysted or *adherent calculi* cannot be destroyed by the new method.

Various diseases of the bladder also forbid it; as an acute catarrhus vesicæ, spasm of this viscus, cystitis, vesical ulcerations, fungous tumours, or a varicose engorgement of the vessels; a thickened, indurated, or cartilaginous state of the parietes of the bladder, &c. Care should be taken not to confound a catarrhus vesicæ with the symptoms of calculus, as the treatment for the last would usually aggravate the former.

"M. Cloquet says, he has cured chronic catarrhs of the bladder, when very severe, by establishing through it, by means of a double catheter, a continual current of distilled water. This practice should therefore be imitated in those cases, where a calculus exists, with a catarrh of the bladder, so severe as to prevent lithontrity. We thus combat at once both cause and effect." p. 174.

Engorgement, and other diseases of the prostate gland, and a contracted urethra, from a cause exterior to this canal, from a cause interesting its parietes, or situated on its internal surface, may altogether prevent or delay this operation for breaking calculi in the bladder;—an operation, which, notwithstanding its inapplicability to certain cases, appears to us, under appropriate circumstances, to be decidedly preferable to lithotomy.

ARTICLE XV.—*A Treatise on Verminous Diseases; preceded by the Natural History of Intestinal Worms, and their Origin in the Human Body.* By VALERIAN LEWIS BRERA, Professor of Clinical Medicine in the University of Pavia, ornamented with five Plates. Translated from the Italian, with Notes; by Messrs. I. BARTOLI, M. D. &c. &c., and CALVET, NEPHEW, &c. &c. Paris, 1804. Translated from the French, with Additions, by JOHN G. COFFIN, M. D. Boston, 1817.

IN drawing up the review of BREMSER's Treatise on Worms, inserted in a former number of this Journal, Dr. COFFIN's translation of BRERA was not in our hands; and it appears to us to be by no means so extensively known among our countrymen as it unquestionably deserves. It is the *only* accessible source of information, on this important subject, possessed by the American practitioner; and is the translation of a book, which was certainly, at the time, the best extant for this purpose. As, however, we have given at length, an analysis of a later and more copious work on the same department of medical knowledge, and as we there made frequent use of BRERA's work in the French, we will not, in the present instance, undertake the same task, but content ourselves with merely indicating the translation to the reader, and making some remarks on the character of the volume produced.

The reader will find, in the review already referred to, various notices of professor BRERA, which point out the great importance attached, by the learned of Europe, to his publications. We have, in fact, been very scantily supplied with elementary treatises on this subject; as no original work on it is, we believe, to be found in either the English or French language. It is truly surprising that such a lacuna in the knowledge of their countrymen, should not, among two such book-making nations, have attracted the attention of some industrious and talented individual, ambitious of introducing himself to the medical world, under the favourable auspices of a useful work.

Dr. BRERA informs us, that he prepared the present treatise to serve as part of a course of lectures, which he was called upon to deliver as professor extraordinary of practical medicine in the university of Pavia; that he originally intended it to be comprised in the same volume with his Treatise on the Worms which inhabit the Human Body; but subsequently determined to publish them separately, from the distinct nature of their principal objects. The present volume is divided into four lectures, of very unequal length: the first, furnishing a description of the principal worms of the human body; the second, an essay on the origin of worms; the third, an account of the symptoms of verminous diseases; and the fourth, directions for treating them. To each lecture are subjoined copious notes, containing the references to the authorities quoted, and many observations of

interest, which the author thought excluded by the finished character of his main work. The book has many of the disadvantages on which we commented when speaking of Bremser; and which, perhaps, are unavoidable in such cases. They arise from the fact of a double translation having in both instances been used; and from notes having been appended by three different hands. Thus we have the author's notes at the ends of the chapters, those of the French translators at the foot of the pages, and the collections of the American translator and editor, incorporated with the text. These circumstances give the volume a broken and dispersed appearance; and, as the learned Italian has given us authorities for almost every thing he says, and as the figures used for reference are large and conspicuous, the attention is very much diverted from the perusal. By opening the leaves at random, we find no less than twenty references in two pages (110, 111.) These circumstances are not chargeable to Dr. Coffin; as the French edition has exactly the same appearance, and even in a higher degree, from the use of large Roman capitals for reference. On the other hand, the work is extremely well adapted to the purpose for which it was designed, if it be used in either of two ways. If the reader abstract his mind from the notes, and briefly peruse the text, he will gain enough for his general purpose, and find it a polished production, written in a pleasing and agreeable manner, and still better adapted to general use from its conciseness. If, instead of mere general instruction, he be in search of more accurate knowledge, and intend to follow out discussions, and collate references, he will find abundant means in the voluminous notes which are appended. All we regret is, that the text of our author is not given to us in a compact body, so as to be easily read through without having its continuity and elegance broken up by numerous or conspicuous references. The notes and additions might then be advantageously read and studied at the end of the volume.

Dr. Brera is, it will be recollected, an advocate of the generation of worms from eggs, and not by spontaneous generation. He believes ova to be capable of passing into the circulation by absorption. Our readers will recollect the curious discussions on this point, which we noticed in a former number. We here learn that the strange metaphysical ideas of professor Bremser, on the production of animated beings by the combination of disengaged spirit with matter, originated from no less an authority than the celebrated entomologist, Redi. Dr. Brera speaks of "his famous hypothesis of the sensitive soul, inherent in those parts of the human fabric, from which the worm was to originate." p. 103.

B. H. C.

ARTICLE XVI.—*The Philosophy of the Human Voice: embracing its Physiological History; together with a System of Principles, by which Criticism in the Art of Elocution may be rendered intelligible, and Instruction, definite and comprehensive. To which is added, a brief Analysis of Song and Recitative.* By JAMES RUSH, M. D. Phila delphia. Maxwell. 1827. pp. 586.

An original and profound physiological work has been published in our city, and no one has yet appeared to review it.

This may arise from two causes, one of them highly honourable, and the other not discreditable, to the work itself. Dr. RUSH's book is, in every sense of the word, highly original. He has chalked out for himself, and laboriously filled up, a new branch of science; and must be content to share the destiny of all originators, that "painful pre-eminence" in which "none aid you, and few understand." To give an analysis of such a book, with an adequate comprehension of the task undertaken, requires a considerable length of time; and no one, it seems, has yet been able to perform that labour sufficiently to his own satisfaction to encourage him to venture before the public.

The other preventive to which we alluded, is the character of the work; which is not medical, or which, at least, only touches medicine at one of its remotest extremities. This has kept it out of the ephemerides of our profession. One of the supporters of this journal had it in contemplation to favour us with a review of it; but was dissuaded by the above reasons, and principally by the consideration, that it would hardly be fair to our readers to occupy a large share of our pages with matter whose affinity to their real object was questionable or remote.

If, as we believe we are correct in stating, it be no easy task to give a sketch of Dr. RUSH's work within the more extended bounds of a review, it must, of course, be understood to be, in the present brief department, absolutely impossible.

Dr. R. has intentionally omitted the whole subject of the mechanism of the voice; for which he refers to the common treatises on physiology. He has confined himself entirely to the study of those modulations of sound, which constitute speech and express the emotions of the mind; and this subject we should judge he had completely exhausted. He found it a new and unexplored mine, an untried field of knowledge; with the exception of the partial and not very celebrated researches of Mr. JOSHUA STEELE, of SHERIDAN, and of WALKER, and of an occasional vague and unimportant hint from some other grammarians. Dr. R. thinks that a little attention to nature would, by the analysis of observation, have enabled moderns to decide with certainty and accuracy, the long contested question of the Greek and Latin accents.

He conceives that, by a minute, careful, and reiterated attention, he has become able to express in definite language, all those varieties which are communicated to the human voice by "quality, force, time, abruptness, and pitch;" designations which he believes to include all "the expressive powers of speech."

The diction of the more general parts of the work is somewhat peculiar; but it is not our present charge to sit as judges of diction. Dr. Rush speaks in the Miltonic style of dignity; and it requires to be a great work to acquit him of presumption. He has written it for posterity, and cares little about the immediate reception it may experience from the world. He has already found its "rewards and punishments in the varied pleasure and perplexity of its accomplishment." He is satisfied in his own mind, that when the future inquirer shall have amply discussed, defended, and finally settled the real, unvarying principles of speech, they will not be found to differ very materially from those of the present work; and, under this impression, he sits down to await his posthumous fame, satisfied for his task by his love of the study of nature.

To such lofty feelings may Providence forbid that we should object: they are the source of the greater part of all that has benefited and dignified our nature. Without the support derived from the abstract love of doing good, those illustrious lights who have benefited in so many instances the medical profession, would never have been able to abide the buffettings which they have undergone while languishing in obscurity; nor would their subsequent labours, if dictated by the love of praise or wealth alone, have been so glorious, so permanent, and so successful. But what is more to our present purpose, is the statement which our author makes in the concluding sentence of his volume; that he "laid aside a practical work in medicine, with the view of undertaking and completing this, and that he is now going to resume it." We are a part of that public who have long wished and hoped, till hope gradually died into forgetfulness and a sense of the diminishing utility of the object, that Dr. Rush would prepare for the press and publish the lectures of his illustrious progenitor. Glad as we should unquestionably be to welcome any medical publication from the pen of one whom we know to be a man of genius, we must express our lingering hope and fixed wish, that nothing may divert him from a task, which, though he may feel it inferior in dignity, is not really so, and which ought to supersede, at present, any original work, if from the simple fact that there is but one person who has it within his power and qualifications to do it. Its usefulness, we have said, has diminished, but is still great, and what is not done from this stimulus might be done for celebrity. Each breeze that brings ships to our ports from the European world, wafts assertions from a foreign nation that *they have taught* American physicians to reason physiologically on disease, and to free themselves from the fetters of ontology, which are, in fact, those of nosology. Is it right, then, for the

representative of Rush to rest quiet, as though he had not been invested with the serpent staff? It is not at all improbable that this may be the last appeal which will ever reach our author on this subject. The tide of medical opinions has changed; he who would stand still, recedes; and the fresh laurels of no ignoble crowd of competitors occupy the place of the venerated tree of our preceptor. How, then, will Dr. Rush reconcile it with the lofty sentiments which we have just described, to withhold from the American people their national system of medicine?

B. H. C.

QUARTERLY SUMMARY

OF MEDICAL AND SURGICAL INTELLIGENCE.

I. ANATOMY.

1. *Imperfect Intestinal Canal.*—In an inaugural dissertation, M. A. Schaefer of Wurtzbourg has given the following extraordinary dissection. A child, born at the full time, had a sallow skin, and vomited all the liquids given to it, while it passed nothing per anum. In seven days after birth, it died very much emaciated. The duodenum, which was much dilated, terminated in a cul de sac, after having received the cholidochus and pancreatic ducts. It was filled with *meconium* and bile. The remainder of the canal commenced, at some distance from the duodenum, by a closed end, and was continued uninterrupted to the anus. The small intestines and colon were not more than two and a half lines in diameter, and contained only a small quantity of white tenacious albuminous matter. This, taken in connexion with previous observations, proves that meconium comes from the liver.—*Bulletin, Jan.* 1827.

2. *Placenta.*—M. Lauth, Jun. informs us, that he has injected with very fine tubes two different orders of vessels in the membrana caduca. One kind proceeds from the caduca to the placental vessels, and the other, from the placenta to the vessels of the caduca. All this belongs to the vascular structure of the womb. According to M. Lauth, these vessels are lymphatics, the first being destined to separate from the maternal blood the materials requisite for the nutrition of the fœtus, and the second, to withdraw from the fœtal blood such matters as are no longer useful.—*Ibid.*

3. *Extra-Uterine Pregnancy.*—M. Breschet presented, some time ago, a memoir to the French Academy of Sciences, on Extra-Uterine Pregnancy. In this memoir, M. B. reports six cases of a new kind of extra-uterine pregnancy, which he calls *interstitial;* because the fœtus is developed neither in the ovarium, the tube, nor abdominal cavity, but in a cavity hollowed out in the substance of the uterus itself. Vid. vol. 3, p. 204 of this Journal.

After the death of the mother, which has always occurred pretty early, the tumour has always been found ruptured, the opening being into the abdominal cavity, and in no instance into the proper cavity of the uterus itself. M. Geoffroy St. Hilaire has made a report on M. B.'s memoir, in which he states his belief, that there is only one kind of extra-uterine pregnancy, instead of four sorts, and that all the varieties are accidental deviations from this one.

A certain kind of organization may exist in a woman, so as to prevent the ovum from reaching the uterine cavity, in which case it develops itself in the ad-uterum. When the size of the embryo has become disproportioned to the distensile capacity of this ad-uterum, either rupture takes place of the sac, or the ovum makes a retrograde march through the tube, and falls into the abdomen, causing an *abdominal pregnancy.*

Mr. Geoffroy thinks it impossible for the fœtus to be developed in the interior of the ovarium, and consequently that there can be no ovarian pregnancy properly so called.—*Ibid.*

4. *Beautiful Experiment by M. Mayer of Bonn.*—In order to prove that the oxygen of the air may pass through the membranous septa of the air cells, and thus get into the current of the blood, M. MAYER made an experiment, which he afterwards varied in several modes. The experiment consists in killing an animal by strangulation, in opening the thorax and pericardium immediately, and afterwards dividing the aorta and pulmonary artery. Distilled water must now be injected into the pulmonary artery, until it flows from the cut end of the aorta perfectly colourless. Having washed out the blood, a green solution of cameleon mineral, which has been carefully preserved from contact of the air, is to be injected by the pulmonary artery: it will flow out from the aorta without any change of colour. But, if the end of the aorta be now tied, and the injection be again thrown in by the pulmonary artery, which must also be secured by a ligature, and artificial respiration be kept up for a few minutes, the fluid injected will be changed to a beautiful red colour, proving that the oxygen of the air has passed the membranes and acted on the cameleon mineral.—*Ibid.*

II. PHYSIOLOGY.

Our physiological collections for this number will be very meagre; the journals having furnished but little new or interesting matter in relation to that department of medical science. Indeed, when we consider the vast acquisitions which it has made in the last seventy years, it seems almost a vain expectation, that any thing considerable remains to be done. The limits of the nervous and absorbent functions remain, however, unremoved to their greatest extent, and it is within them, if any where, that we may look for more discoveries and augmentations.

5. *Digestion.*—MM. LEURET and LASSAIGNE on the one part, and Messrs. TIEDEMANN and GMELIN on the other, were competitors for a prize of 3000 francs, offered by the Academy of Medicine of Paris, in 1823, for the best memoir on the subject of digestion. The commissioners for awarding the prize, which was to be determined in 1825, consisted of MM. MAGENDIE, THENARD, GAY-LUSSAC, CUVIER, and DUMERIL. These gentlemen, thinking, that neither of the competitors had merited the prize, considered, nevertheless, that both memoirs were possessed of great merit, and recommended that honourable mention should be made of them by the academy, and that each memoir should be entitled to 1500 francs, as compensation for the expensive experiments, which were made in the course of their preparation.

These works are at variance in some results; and Messrs. TIEDEMANN and GMELIN have published an indignant pamphlet, and scornfully refuse to accept either the money or the praise of the academy, both which Messrs. L. and L. are said to have received with gratitude.

MM. LEURET and LASSAIGNE state, that "the composition of saliva is the same in all animals; in man, the dog, and the horse: it contains one per cent. of solid matter, consisting of free soda, the muriates of soda and potassa, carbonate and phosphate of lime, a trace of albumen, and much mucus." The other gentlemen's experiments were made with pure saliva from the salivary duct of the sheep and dog, and with the impure saliva of man. In addition to the substances mentioned above, they found osmazome and alkaline acetates. The saliva of the sheep contains also *sulphocyanate of soda*, but no acetate. In man, the alkali in all the alkaline

salts is not soda but potassa; and there is also a sensible quantity of sulpho-cyanic acid. "It appears, therefore, that the animal principles are nearly the same in all, but that the salts are different in each."

The German and French physiologists agree in the results of their experiments with saliva on aliments out of the body. It accelerates putrefaction, lubricates the alimentary bolus, brings sapid bodies in contact with the organ of taste, and prepares the food for digestion by softening it. "But TIEDEMANN and GMELIN," says the Edinburgh Reviewer, "likewise conceive, that its animal principles serve to assimilate unazotized aliments, and as to the sulpho-cyanate of potassa, they ask whether its object be not to destroy the contractility of the fibres of the food. This question may be answered by another: is there any contractility to destroy in boiled or roast meat?"

6. *Functions of the Spleen.*—MM. LEURET and LASSAIGNE, in their memoir on digestion, adopt the opinion, so long ago inculcated by Dr. RUSH, that the spleen is a mere diverticulum for the blood, and they say, during digestion. There is an increased afflux of blood to the mucous alimentary surfaces, when digestion is going on; consequently more blood must pass into the hepatic circulation. The meseraic veins must be much distended, (and they are not very extensible,) unless the splenic vein ceases to contribute its usual quantity to the portal circulation: but if it discharges less, its minute ramifications, which are highly extensile, will contain more, and thus serve as a diverticulum, while the digestive blood, if we may so speak, is finding its way through the liver. They also observe, that the spleen, examined in an animal that is fasting, has a rosy, or vermilion tint, is bluer after chymification has begun, but becomes of a deep bluish-black, when the chyme has passed the pylorus.

7. *Pancreatic Juice.*—MM. LEURET and LASSAIGNE have examined the pancreatic juice in the sheep, dog, and horse. M. MAGENDIE had found but one drop to be procured, in his experiment, in the course of half an hour. Messrs. TIEDEMANN and GMELIN got 89 grains from a sheep in five hours, and 154 grains from a dog in four hours; while Messrs. L. and L. obtained three ounces from the horse in half an hour. The latter say, it is always alkaline, but the others inform us, that the first portions obtained are feebly acid always, but what flows afterwards is faintly alkaline, which may be owing to the operation.

Messrs. LEURET and LASSAIGNE consider its composition to be identical with that of the saliva. Messrs. TIEDEMANN and GMELIN say, that it differs from saliva in never containing any sulpho-cyanic acid, free soda, or mucus; in being acid; in containing more solid matter, especially albumen; and in containing, at least in the dog, a principle precipitated rose red by chlorine, and sometimes a good deal of phosphate and acetate of soda.

Messrs. T. and G., reasoning from the large quantity of azotized principles which it contains, infer that its purpose may be to animalize the unazotized nutriment of vegetable matters. The circumstance that the pancreas is much larger in herbivorous than in carnivorous animals would seem to favour this opinion.—*Edin. Med. and Surg. Journ. April*, 1827.

8. *Cephalo-Spinal Fluid.*—At the sittings of the French Academy of Medicine, Dec. 4th and 11th, M. MAGENDIE read a memoir on the fluid, which is found in the cranium and spine of mammiferous animals. He finds that the quantity varies in the healthy adult from two to five ounces. Among other uses, M. MAGENDIE supposes this fluid to be destined to keep these cavities in a state of plenitude, which otherwise could not be maintained, owing to the shrinking (dessechement) of the brain and spinal marrow of aged persons, which would cause a void injurious to the functions of those organs. He has always found this fluid in large quantity in emaciated

and aged women at the Salpetriere. Many experiments which he has performed prove, that this liquid is rapidly renewed when artificially evacuated.

This gentleman has shown by experiments, that if the spinal fluid is evacuated, and allowed to cool to a certain degree, and is afterwards injected into the cavity, a trembling and momentary paralysis are produced; but if the fluid is drawn off, and reinjected without cooling, these accidents do not happen. Another observation is, that merely bending the head forward on the breast, occasions the spinal fluid to move, so as to accumulate it in particular places; and he suggests that it may play an important part in the development of electricity.

The discovery of the cephalo-spinal fluid naturally led him to investigate the nature of that which is found in the cerebral ventricles. He had a subject with decided effusion into the ventricles of the brain. Whenever he pressed, ever so slightly, on the hemispheres, he found that a limpid fluid escaped through an opening immediately before the end of the fourth ventricle, at the extremity of the calamus scriptorius. In examining a great number of healthy brains, he found this opening in all, and at the same place. Hence, he asserts, that the fourth ventricle communicates freely with the sub-arachnoid cavity of the spine. This communication is described as a round opening, at least two lines in diameter, and sometimes larger, placed between the two posterior arteries of the cerebellum. M. Magendie proposes to call this the entrance into the cavities of the brain.

The two lateral ventricles, it is well known, communicate with the third ventricle, and the third with the fourth; and it would appear, from the present observations of Magendie, that this latter communicates with the spinal cavity. In a case of spina bifida, pressure on the tumour occasioned a bulge in the fontanelle, and the child suffered from compressed brain, being drowsy, (*assoupie,*) as long as the pressure was continued. Four ounces of ink, injected into the lower part of the spinal canal, and without much force, was sufficient to blacken not only the whole surface of the brain, but also the parietes of all its cavities.

In more than fifty dissections of persons who had never exhibited any signs of cerebral affection, he always found from half an ounce to two ounces of this serous fluid. Care ought to be taken, in dissecting, not to force the water out of its proper place, and it should be collected by means of a dropping tube, (*pipette.*) If the quantity exceed two ounces, he thinks it is the result of a morbid state.—*Revue Méd. Jan.* 1827.

9. *Absorption.*—Professor Regolo Lippi, of Florence, has made a series of experiments on the absorbing vessels, which enable him to come to the following conclusions:

1. In man, and in animals which nearly resemble his physical structure, absorption is probably effected solely by the lymphatic system of vessels.

2. Absorption seems never to be effected by means of veins, whether in the healthy or diseased state, so long as life continues.

There are admitted by anatomists, four kinds of lymphatic vessels. 1. The chyliferous: 2. Those arising from the mucous and serous membranes: 3. The cellular and those which originate throughout the whole body: 4. The cutaneous. To these, professor Lippi would add a fifth kind, or those which he can demonstrate as arising from the arteries.

Lymphatic vessels arise from the arterial system, from the surfaces of membranes, and wherever secretory vessels exist, or effusions can take place. Veins arise, on the contrary, from the arterial capillaries, and from the lymphatic system. All lymphatic or absorbent vessels do not, therefore, go to the thoracic duct. "I discovered and published, in 1824, that many lymphatic vessels opened into the vena cava and vena portæ."

Again. "The lymphatics which I discovered, empty their contents into the vena cava, into its divisions, and into the azygos; and they are so numerous, that we may affirm, that there is not a vein which does not communicate with lymphatic vessels." He also asserts, that the junction of the lymphatics with the vena cava, about the third lumbar vertebra, is always to be found in the natural state.

The chyliferous absorbents do not all terminate even in the thoracic duct; this physiologist having traced them to the emulgent veins, and elsewhere.—*Journal des Progres des Sci. Méd.* 1827.

10. *Bellingeri on the Nerves.*—C. F. Bellingeri, of Turin, has published two dissertations; one on the Antagonism of the Nerves, the other consisting of Physiological experiments on the Spinal Marrow. They are contained in the third volume of the Memoirs of the Royal Academy of Sciences at Turin.

Like Mr. Charles Bell, the Italian writer describes the spinal marrow as consisting of six longitudinal bands or bundles, two anterior, two middle, and two posterior. The anterior fissures or divisions, with the lateral and posterior ones, separate these bundles from each other. The cineritious matter of the medulla spinalis presents, when transversely divided, the form of the letter H. The anterior and posterior roots of the spinal nerves have a triple origin. The anterior are composed of filaments coming from the anterior and lateral bundles or columns, and also from the anterior fissures; while the posterior origins are derived from the posterior and lateral columns.

When he completely or almost entirely divided the posterior roots of the lumbar and sacral nerves, in lambs, kids, and frogs, the power of extending the lower extremity was absolutely destroyed on the corresponding side, while the power of flexion was preserved. The other limb was unaffected. The sense of touch was also wholly abolished in the injured limb, but unaffected in the sound one.

Hence, this physiologist concludes, that the posterior roots of the spinal nerves are destined to communicate the power of extending the limb, to give the sense of touch, and to convey painful impressions to the sensorium.

The division of a large proportion of the anterior roots of the lumbar and sacral nerves in lambs, and their complete division in frogs, suddenly destroyed the power of flexion in the corresponding extremity, leaving the extensor muscles unaffected, and not producing any sensible diminution of the touch or ability to feel pain. Whence, he naturally concludes, that the anterior roots do not serve in the least degree the purposes of sensation, but preside over the movements of the flexor muscles of the limb, and that there is a real antagonism between the anterior and posterior roots of the spinal nerves. It happened, during these researches, that an injury was done to the anterior columns of the spinal marrow of a lamb. After death, the kidneys were found highly inflamed, as well as the mesentery. The acini were thick and white, resembling the serum of half coagulated milk. These appearances would favour the inference, that inflammation of the anterior part of the spinal marrow may produce symptomatic inflammation of the kidneys and mesentery.

Bellingeri also ascertained, that when he cut transversely across the *posterior* columns of the spinal marrow in the lumbar regions, the extensor muscles of the leg lost all their power. Sensation and touch were not in the least affected, but some languor of the flexors was induced. Now, when the posterior roots were cut, both extension and sensation were destroyed; while the posterior columns being cut, abolished the extensor power, but not sensation. This he explains on the fact of the triple origin

of the spinal nerves, from the posterior and lateral columns of the spinal marrow, and also from the posterior horns of the cineritious substance, whence these roots derive their influence over the touch. When this triple origin is divided, as above mentioned, the double functions are destroyed. On the contrary, when the posterior columns only are divided, the filaments alone arising from them are destroyed, and extension only ceases.

The author of these experiments also states, that, when the posterior columns are divided, as above, the urine is retained in the bladder twenty or thirty hours without being expelled, and then flows involuntarily. From this circumstance, he concludes, that the nerves which preside over the *relaxation* of the sphincter vesicæ muscle, originate from these columns.

He could not make any similar inferences with desirable accuracy as to the sphincter ani muscle.

He also divided the anterior columns between the first and second lumbar pair in lambs. The flexor muscles of the hind legs lost their power, while extension remained perfect, and only a slight diminution of sensibility was noticed. Hence, the anterior columns preside over the flexion of the limbs in quadrupeds, and have little or no concern with sensation; and finally, the anterior columns are for flexion, the posterior, for extension.

Another most remarkable result was, that incontinence of urine was occasioned by the division of the anterior columns, and lasted during life. They, therefore, give origin to the nerves which occasion sphinctorial contraction, and thus there is a real antagonism of the sphinctorial nerves.

When the anterior columns were divided, there was also a retention of fæces as long as the animals (lambs) lived; and after death the rectum was found full of hardened matters. He infers from this, that these columns give rise to nerves of sphinctorial relaxation of the rectum; and it is probable that the posterior occasion its contraction, so that there is also antagonism in this case.

Details are also given of experiments on the lateral columns. Transverse sections of both lateral columns leave touch and motion in the abdominal extremities, they being only a little weaker. The animals passed no excrements; and two out of four retained their urine until death, which occurred in twenty-four hours. The conclusion drawn, is, that the lateral columns do not influence sensation, or motion, as to its direction, but only as to its force; and that they have great influence on the functions of the rectum and bladder.

Experiments on the lateral and posterior columns did not, according to Bellingeri, affect the respiratory muscles; but respiration was rendered frequent and panting, by the section of the anterior columns.

By a very delicate operation, he divided the gray matter in the centre of the cineritious portion. The abolition of sensation was the consequence, while both kinds of motion continued perfect. In half an hour the power of sensation returned, and became more exquisite than in the normal state of the sense. He, therefore, interposed a thin lamina of wax between the cut ends of the gray matter, immediately after which sensation again disappeared, and did not return for two hours, when, having removed the wax, it again returned, but not to the same degree as in the normal state.—*Ibid.*

11. *Gastric Juice.*—We will not let pass this occasion to notice, that Dr. Bostock, in the second volume of his Physiology, published in 1826, advocates the theory of the solvent power of the gastric juice. His remarks extend from p. 482 to p. 489. He considers it in vain to deny the reality of its solvent property, as exhibited by Reaumur, Steevens, and Spallanzani; and in a note, p. 486, speaking of Montegre's celebrated experiments on himself, he says, "I conceive that what has been supposed to be the gastric juice, is in fact nothing more than saliva: that it possesses no

peculiar power of acting on alimentary matter: that the principal use of the gastric juice is to dilute the food; and that the only action of the stomach consists in 'une absorption vitale et elective,' in which the absorbent vessels, in consequence of their peculiar sensibility, take up certain parts of the food, and reject others. That the conclusion of M. MONTEGRE, respecting the action of the stomach, cannot be maintained, is correctly observed by Mr. BERTHOLLET, in his report upon the memoir; because, until *the food has undergone a certain chemical change, the substance does not exist which is taken up by the absorbents.*" We have made this citation, as well for its intrinsic merit, as for the benefit of those among us, (and they are not few,) who are disposed to treat SPALLANZANI's experiments with indifference, to use no harsher term. Either SPALLANZANI and STEVENS must have been a couple of very dishonest men, or there must be a gastric solvent.

III. PATHOLOGY.

12. *Physiological Medicine.*—The modern doctrines have recently acquired a new addition of strength in the accession of the editors of the Medico-Chirurgical Review, a journal which we must consider as the best in England. This is the more remarkable, as that publication, if we understood it correctly, was, until very lately, decidedly opposed to the new French system. The number for April last commences with a translation of the two first sections of the aphorisms or propositions in medicine, which stand prefixed to the "Examen des Doctrines Medicales" of Dr. BROUSSAIS, and which were, several years since, offered to our countrymen, through a translation by Dr. DUDLEY ATKINS, in a contemporary journal. It is impossible to convey a system or code of doctrines without the ample development which volumes permit; but for the general objects of a journal, an outline or sketch may be useful, for the purpose of enabling the reader to feel the applicability of much of the novelty which he finds extracted from the European publications. In relation to several parts of these doctrines, thus much may be readily obtained from a perusal of the different notes, papers, and reviews, which these volumes already contain; but readers are frequently heard to inquire where they can obtain the outline of the whole. The system of Dr. BROUSSAIS mainly consists in the history and description of the inflammations of the mucous surfaces of the stomach and bowels, and of the doctrine of irritation. The physiology adapted to this interesting system has been already given to the American public, in a translation. The gastro-enteric diseases are well taught in our clinical seminaries; and on the subject of irritation, we expect to be able to offer a brief sketch in our next number, in a review of two late works treating on that subject. It is not necessary, we apprehend, to dilate much upon a theory, as we doubt not the grand outlines will abundantly serve to show the bearing, direction, and form of the new doctrine; which can only be useful, in proportion as it is chastened, and adapted to nature, by the observations of a practical observer.

We have thus far, as it is our responsible duty to do, written what we considered proper to address to those of our countrymen who have honoured us with their subscriptions. To our transatlantic readers it may be permitted to observe, with all due respect to illustrious names, that we Americans do not concede the exclusive appellation of "physiological" to the followers of Dr. BROUSSAIS. To the great majority of the physicians of our country, viz. the pupils of our venerated RUSH, it is a familiar prin-

ciple, long acknowledged and acted on, that diseases are not to be prescribed for from their names or definitions, but from the physiological condition, or as he so frequently reiterated it, "the state of the system." To equalize excitement, and to raise or depress it to the natural standard, were the great practical rules which he applied to all the forms of disease which were then understood. The real additions to these principles, which we apprehend to have been made in Europe, and particularly in France, consist in various, and invaluable extensions of the methods of distinguishing derangements of the organs by the external symptoms. We are not undertaking to set forth the claims of this distinguished physician to remembrance—they would require much space and an abler pen—but merely to assert for him the establishment of physiological principles in America.

13. *Paralysis of the Insane.*—Dr. F. L. Calmeil, *first internal pupil* of the lunatic hospital of Charenton, at Paris, has prepared a volume of considerable size on the above affection; one which is but little noticed and less analysed among us. The reviewer in Johnson's journal, for April, (p. 362.) states, that a great number of the unfortunate objects alluded to are affected, in one shape or other, with paralysis. We should hardly have been able, from observation in our institutions, to use such strong expressions, but we have frequently seen the occurrence.

Our readers may, perhaps, be prepared, from the review of Lallemand and Bouillaud, contained in our present number, for the expression of the opinion that almost every paralysis of severity, not traceable to the local injury of a nerve, is owing to some organic change produced in a portion of the brain. Dr. Calmeil conceives himself to have established that palsies are very frequent in the insane, that the organic læsions which give rise to them are almost always situated within the brain, and that they are most generally of the following classes: viz. chronic inflammation of the cerebrum, especially on its surface, and the meninges; cerebral or meningeal hæmorrhages (apoplexies); sanguineous congestions; softenings of the brain or spinal marrow, and encysted abscesses. Tubercles and hydatids occur in the brains of maniacs; but they are rare.

General paralysis of the insane most usually commences by an impediment in the speech, unaccompanied with deviation of the tongue to either side. After some time, follow slowness and hesitation in locomotion, a stooping, or swinging gait, stumbling, insensibility to pinching and to odours, involuntary escape of the fæces and urine, and sometimes extreme costiveness. The general health appears but little affected; the tongue is moist; the appetite considerable; the digestion easy; the heat of the skin natural, and the pulse moderate and regular. At length, the animal powers waste away so far that almost nothing remains but a species of vegetable existence, in which food is only swallowed when administered by force; scarce the least vestige of sensation or intelligence remains; the digestion languishes; the body emaciates; sloughs form in the parts subjected to pressure; dropsical swellings take place in the scrotum, feet, and abdomen; disease often supervenes in the lungs or the gastro-enteric apparatus, and the patient expires.

The morbid appearances in the head, are, unusual vascularity of the cranium; injection of the dura mater with blood; vegetations of the pia mater; (rather a rare occurrence, generally found about the edges of the fossa Sylvii); serous effusion into the cavity of the arachnoid; (almost an invariable occurrence, generally extensive, but mostly accumulated at the basis of the brain; mostly limpid, but occasionally turbid or sanguineous;) concretions of coagulating lymph in the arachnoid; false membranes between the coats of that membrane; exsiccated effusions of blood; in one case an effusion of blood into the cavity of the arachnoid, almost universally;

œdema beneath the surface of the arachnoid, raising that membrane from the convolutions, and very much resembling a jelly, till the liquor is seen to escape freely from a single orifice; thickening and injection of the arachnoid and of the pia mater; adhesion of the latter to the cortical substance; softening of the surface of the brain; an erysipelatous, rosy, lilac, violet, or deep red hue of the cortical substance, accompanied by injection; in some cases hardening of the corpus callosum; frequently effusion in the ventricles, and generally in the spinal cavity; and, each in a single case, an apoplectic cicatrix, an ulceration, and a tubercle.

The paralysis was chiefly seen in cases of *dementia*, which might exist separately, or be combined with *monomania*, or general *mania*. Its *duration* was from eight to eighteen months; and life was at all times very precarious; a termination sometimes approaching with only a few days warning, in the midst of apparently a tedious case; while, at other times, an unexpected improvement would grant a reprieve for a more or less long period. Messrs. ROYER COLLARD, and ESQUIROL, from whose practice the author has collected his valuable work, consider the disease as totally incurable. Of male lunatics, one in fifteen were affected with general paralysis; of females, one in fifty. Our author never saw this combination in persons under thirty-two years of age; from thirty-two to forty, he saw fourteen cases; from forty to fifty, seventy; from fifty to sixty, nine. The persons most subject to it were military men, particularly the soldiers of Napoleon! which the author ascribes to hardship, excesses, and mental and moral excitement. Next in frequency come the custom-house officers, including excise-men and tide-waiters. Exposure to heat was visibly a cause; as among founders, cooks, bakers, glass-makers, &c.; also excesses in the passions, and in wine, venery, spirituous liquors, &c.

Abstraction of stimulation, and a mild antiphlogistic treatment, were practised, and are recommended. No success is claimed; but the author flatters himself that *incipient* cases may be recovered. At any rate, he thinks the evidence conclusive against the stimulating treatment, including electricity, and nux vomica, or its essential principle, strychnine.

14. *Martinet's Manual of Pathology* has been translated by a Mr. QUAIN, and published in London, highly recommended by the reviewers.* It is a catalogue, 1st, of the rules and methods of examining diseases during life; 2nd, of the characters of diseases drawn from the symptoms, considered seriatim; and 3rd, of the morbid appearances found in each after death. It is merely a manual, as its name imports; but is admirably adapted to introduce the reader to French pathology. We can also recommend it as an excellent book from which to learn medical French, still speaking of the original. Mr. QUAIN's translation is highly spoken of; and is, we believe, for sale in this city. We have not seen it.

15. *Pathology of the Nerves of the Face.*—Mr. CHARLES BELL has published an interesting series of cases illustrating his curious researches into the functions of these nerves. We have not space to analyse them, further than to say that they go very far to confirm the views which he has already published on the subject. They are analysed in JOHNSON's Review for April.

16. *Erysipelas.*—Mr. ARNOTT, of London, has inserted a paper in the London Medical and Physical Journal, in which he conceives that he has given good grounds for the following proposals and inferences:

1. That the term erysipelas should be restricted to that febrile affection of the system, accompanied with inflammation of the integuments of the *face*, to which it has most usually been applied; and, that until we have

* Med. Chirur. Rev. April.

better evidence for so doing, the expressions erysipelas and erysipelatous should not be applied to affections of the skin in other parts of the body.

2. That the term erysipelas phlegmonodes should be abandoned as unnecessary, as well as inaccurate, and applied to dissimilar morbid conditions.

3. That inflammation of the cutis of the extremities and trunk, it matters not from what cause, or however extensive, should be designated simply as such, to the exclusion of the terms erysipelas and erythema, as improper and unnecessary.

4. That inflammation of the cellular substance should be described as such, and by name; and, as no necessity exists for the addition of the term "diffuse," so long as we possess the adjective "extensive," that the employment of the former word should be abandoned.

Lastly. That aponeurotic and subaponeurotic inflammation should likewise be withdrawn from its erysipelatous disguise, and appear in its own proper character and name.

To support these propositions, which are, in fact, the expression of a set of pathological opinions, Mr. A. inserts the particulars of three cases.

The mother of a family died of inflammation of the pharynx, terminating in mortification; and the husband and daughter were subsequently affected with erysipelas of the face, and inflammation of the throat.

From these narratives, our author proceeds to an analysis of different publications on these subjects by Drs. Stevenson, Nelson, Duncan, Wells, Dickson, and Butler, and Messrs. Lawrence and Blackett; in which he shows, we think successfully, as indeed has already been the inference to which many have inclined from the perusal of a part of their works, that diseased processes of very different natures have been included under the appellation of erysipelas; and that it is better to name each of them *physiologically*, as many moderns would say, according to their situation and real nature, rather than by an abstract name, implying a common but ill-defined existence in them. We did not suppose, however, till we recently learned it, that any one confounded simple inflammation of a fascia, or of the cellular substance, as after bleeding, with erysipelas; and only imagined that it was common to neglect, or consider as a mere extension, complication, or constituent part of the disease, the occurrence of the latter in a case which already presented a vivid redness on the surface. Again, why the term erysipelas should be confined to the affection of the face, and to one co-existent with sore throat, we see no sufficient reason. Certainly, we have often seen it arise from an internal cause, extend beyond the face, and exist without any sore throat. Mr. Arnott also argues in favour of a contagious quality in this affection: and he has undoubtedly furnished us with several groups of cases, including his own, and those of authors, in which one seemed to follow the other in families. Whether this is to be regarded as evidence of contagion, (a mode of reasoning not uncommon among the English,) or whether, in a disease which so constantly occurs without any intercourse among the sufferers by it, it may be referred to a similarity of the unknown morbid causes acting on the individuals of a family, as in the case of the Plymouth dock-yard disease, must be left to the judgment of the reader.

17. *On Making Anatomical Preparations in Hot Climates.*—Numbers of our readers will recollect the bar which has been put in the way of the study of morbid and healthy anatomy by the heat of southern climates, a difficulty which has been particularly felt in the United States, where it has often crippled the exertions of the most enthusiastic and well instructed physicians. This is the more to be regretted, as, owing to the previous operation of the same cause, the diseases of hot climates, so important to

all commercial nations, and to none more so than to the United States, have never been sufficiently studied in dissection. Numerous autopsies are to be found; but the reflected light which is obtained by the competition of emulous investigators, and by reiterated inquiry, cannot be said to have thrown its lustre on those various and terrific maladies.

Dr. JOHN DAVY believes, (Ed. Med. and Surg. Journal, for April,) that preparations may be made, by using proper precautions, in the hottest parts of the world. "The average maximum of the highest temperature in the hottest seasons, even in intertropical climates, is from 80° to 90° Fahrenheit;" and at this elevation of the thermometer, the changes which take place in animal matter, do not differ in nature from those which occur in more temperate regions, but only in degree, taking place with twice or thrice the celerity. To meet this rapidity of decomposing causes, Dr. DAVY proposes an equal rapidity in dissection and preparation, together with neatness, and an entire finish of the preparation at once. He strongly urges the importance of completing the separation at the first effort, as a means of preventing fœtor, decay, deformity, and disgust at returning to it. When unfinished preparations are thrown into jars together, or crammed into vials too small for them, besides the additional chance of decomposition thereby incurred, they lose their shape, and become contracted and wrinkled. Experience has shown him too, that when articles are laid by for future completion,—this from postponement becomes a disgusting task, and they are finally thrown away.

Dr. DAVY macerates all articles which do not contain much fluid, in strong spirits, immediately on their removal from the body, and not in water. He states, that inflamed mucous membranes, thus treated, will retain their red colour, the blood coagulating in the vessels. Parts from which blood or copious mucous matters must be removed, are to be soaked in water, renewed very frequently, or in spirit and water, or saturated brine. Dr. D. finds that a navy surgeon, or other medical man in travelling engagements, may, notwithstanding the above remarks, collect a large number of morbid preparations in one or two large jars; but they must be displayed and arranged exactly as they are to remain on the shelf, and each attached to a float of cork; or, if lighter than spirit, to a small piece of lead, while crowding is prevented by using threads of such different lengths, as will leave each article sufficient room to preserve its shape. In this way Dr. DAVY evidently means that they may be sent beyond sea. The jar is to be carefully stopped, without any connexion between the preparations and the neck of the vessel; and the cork or ground stopper is to be tied over with a piece of bladder, oiled, and to be carefully preserved, not only from rats, but from cock-roaches, which will devour the membrane thus used. Dry preparations require no other precaution than entire desiccation, and repeated varnishing; but the anatomist is very apt to overrate the drying power of a tropical atmosphere. If the wind come over an extent of land, and assume the well known character of the Harmattan, exposure to it will be sufficient; but sea breezes are commonly loaded with moisture, and preparations will not dry in them, but decay rapidly. In this case they should be exposed to the rays of the sun, or to a fire. After varnishing, it is necessary to wrap them in paper, dried with equal care, and to enclose them in a tight box, to exclude insects.

18. *Yaws and Small Pox communicated by the same Inoculation.*—A case is mentioned by Dr. JAMES RANKINE, (Ed. Med. and Surg. Journal,) on the authority of Dr. QUIER, in his paper on the disease first named, which we have not space to analyze.

IV. THERAPEUTICS, MATERIA MEDICA, AND THE PRACTICE OF MEDICINE.

19. *Tobacco in the Painters' Colic.*—Dr. Graves, in the Dublin Hospital Reports, vol. IV. recommends the application of tobacco stupes to the belly, till the peculiar effects of the drug are manifest in the system. This form of administration he prefers to that by injection, as equally efficacious, less rapid in action, and capable of being left off more easily before any alarming symptoms appear. Their employment is to be followed up by the usual cathartic medicines, especially pills containing croton oil. —*Edin Med. and Surg. Journ. April*, 1827.

20. *Treatment of Encephalitis, Tremefaciens, or Delirium Tremens, by Depletion.*—Professor Speranza, in his Medico-Clinical Reports of the hospital at Parma, disapproves of the method of treatment by stimulants and liberal doses of opium, pursued by Saunders, Sutton, Rayer, Perrone and others; but on the contrary approves of the plan of Frank, by general blood-letting, by local bleeding with leeches applied to the head, by cold applications, as ice or cold water to the scalp, and by the use of purgatives. This practice is conformable to the experience of Pinel and Esquirol of Paris, and Hope and Thompson of Edinburgh.—*Ibid.*

21. *Bleeding practised in the Cold Stage of Intermittent Fever.*—Dr. Mackintosh, in a report of cases of intermittent fever, published in the Edinburgh Medical and Surgical Journal, states his having used the lancet with success in the cold stage of intermittent fever. He submitted himself to the experiment in the first instance, disregarding altogether the force of authority upon this subject. Bark and all the usual remedies had failed. After a detail of the facts, the author draws the following among other conclusions: That bleeding thus used will sometimes cure the disease; that, in every case in which it has been tried, it has cut short the cold fits, and prevented the subsequent hot and sweating stages of the paroxysm; that the remedy promises to be most serviceable in severe autumnal intermittents, and more particularly in the pernicious and malignant fevers, as they are termed, of Italy, Holland, and other marshy countries, which are well known to be very fatal under the ordinary treatment; that it may be used with safety in any climate, where the cold stage continues long and threatens danger; that bleeding in the cold stage is at all events more successful than in the hot stage, or than in the intervals; and finally, that the practice may be adopted in the first stage of all fevers, and probably will be found useful by surgeons in concussion of the brain.

While we agree with Dr. Mackintosh in the belief that "Cullen's system has been a great bar to all improvement in medicine, and is the principal cause of the backward state of pathology in this country, when compared with the strides made in that department by our professional brethren in France," we are not prepared to adopt his practice of bleeding in the cold stage of intermittent fevers. It has, we know, had its advocates among many physicians of the Rush school in the United States, but the success has not been such as to ensure our confidence, or, speaking less equivocally, to remove our fears of this plan. We remember very distinctly, before the study of medicine had engaged any portion of our time, to have heard a physician of ripened age, tell a friend, of his narrow escape from death, in consequence of his having been bled, at his own desire, during the cold stage of an intermittent fever. As regards venesection during the hot stage, we can positively aver, in opposition to the opinion of Dr. Mackintosh, that the first instance in which we made use of the lancet in

intermittent fever, was during this period, with the effect of preventing a recurrence of the paroxysm. Similar success under like circumstances has attended the practice in some other cases in which we have had recourse to it. We moreover doubt very much, whether the surgeon, who unites pathological research to experience, will approve of venesection in the first period of concussion of the brain.

22. *Salivation speedily produced by inhaling Mercurial Vapour.*—The London Medical and Physical Journal for March, contains an extract of a letter from Capt. SYKES of the Indian army, dated Poona, August 28th, 1826, giving an account of a salivation produced by the disengagement of mercurial vapour from a retort, which had been exploded during the process for the distillation of quicksilver to which lime had been added. There were six persons in the room and adjoining office at the time, of whom two complained of tenderness and pain under the jaws, and soreness in the joints, after the lapse of two hours; a third was ill and unable to move after three hours. The next morning at ten o'clock, the whole six were suffering from sore mouths; one of them a European writer, whose system had resisted forty grains of calomel, had been spitting all night. On the twenty-second day from the occurrence of the accident, all were well except the man who had supplied the furnace. The Captain adds, "Our medical men produce salivation in twenty-four hours by fumigation, and I have heard of a recent instance of salivation being produced in seven hours by fumigation."

"My Shastree, a learned Bramin, asserts, that the practice of producing salivation by means of mercurial vapour inhaled by the lungs, has been used by the Hindoos from time immemorial. Beeswax is melted, and spread over strips of thin cotton cloth; an equal quantity of cinnabar in the form of powder is spread over the waxed strips of cloth, which are then rolled up in the shape of candles. The person to be salivated is seated on his haunches on the ground; a blanket is thrown over him; the lighted cinnabar candle is placed under the blanket, so that he inhales the mercurial vapour. A finger's breadth of the candle is burnt to salivate a boy; three or four fingers are required for a lad, and six for a robust man.

"When I expressed some doubts of this practice being of such antiquity among the Hindoos, my Shastree pointed out a passage in the 'Shaarunga Dhur,' an ancient Shanscreet work, in which the process is described."

The readiness with which the system is affected by means of mercury inhaled, is correspondent with our knowledge of the rapidity of absorption from the mucous membrane of the lungs, as shown in the experiments of MEYER and others.

23. *Ascites cured by the Injection of the Vapour of Wine into the Abdominal Cavity.*—At the meeting of the Royal Academy of Medicine in Paris, on the 9th of January last, M. L'HOMME, a physician of Chateau Thierry, read a paper bearing the above title. His patient, the subject of the treatment by injection, was forty-nine years of age: he had enjoyed good health until his thirty-eighth year, when he was seized with hæmatemesis which lasted four days, and on its subsidence, he began to suffer from enlargement of the abdomen. He had taken various medicines and been tapped six times, when Dr. L'HOMME was consulted on his case. A trial was then made of all the customary remedies in such a disease, viz. drastic purgatives, diuretics, the preparations of squills, digitalis, and nitre, &c. Dr. L'HOMME, having read in the Annales de la Médecine Physiologique, (BROUSSAIS') an account of two cases of abdominal dropsy cured by an injection of the vapour of wine into the peritoneal cavity, resolved on trying the remedy in this instance. He was the more encouraged to do so from the good general health of his patient, and the apparent freedom from

visceral inflammation. Sixteen repetitions of the vapour injections were practised, which were unaccompanied by pain or any inconvenience except a temporary distention of the abdomen. For about two months complaints were made of occasional dull colicky pains, which were not, however, sufficiently intense to require medical assistance. After that period the ascites entirely disappeared, and there has been no return of the disease during the two years that have since elapsed. The vapour was drawn up by a syringe applied to the end of a funnel, which was placed inverted over a coffee pot containing the wine in ebullition, and then injected through an opening in the abdominal parietes made for the purpose. Dr. L'Homme tried the plan on another patient who had been labouring under the disease for twenty-nine years, but without success. There was, however, no sinister or unpleasant occurrence following the use of the vapour.—*Archives Gen. Février.*

24. *Cerebral Inflammations.*—M. Costa, in a work entitled *Theoretical and Practical Reflections upon the Treatment of Cerebral Inflammations*, disapproves of the practice of applying ice or cold water to the head in these diseases, and reprobates also the use of blisters to the cranium. His plan is to direct the head to be shaved, and a great number of leeches to be applied along the sagittal suture, and especially at its posterior end. The suture is likewise to be covered with emollient cataplasms, to be renewed from time to time, and general bleeding, if necessary, is to be had recourse to. M. Costa founds his practice on his belief in the circumscribed extent of inflammation of the arachnoid membrane and of the brain, and of this being generally at the anterior portions. By the application then of leeches on the sinciput, the parts beneath are more directly disgorged; since the superior longitudinal sinus, the recipient of all the veins of those parts of the encephalon, is thereby more immediately acted on. When cerebral inflammations are sympathetic of gastro-enteritis, which is most usually the case in children, we are advised by our author to combat this latter disease, unless the encephalitis become predominant, and then the treatment will be the same as above mentioned.—*Archiv. Gen. Jan. et Fev.*

While we receive with suitable acknowledgments the advice of M. Costa, to employ leeches freely in the manner directed by him, we must, for the present, beg leave to retain cold applications as a useful therapeutical agent, and rather an adjuvant to, than militating against, the benefits of general or topical depletion, and the good effects of which singly have been sanctioned by no little experience.

25. *Balsam Copaiva and Cubebs administered per anum as a Remedy for Gonorrhœa.*—Dr. Velpeau, in the January number of the *Archives Générales de Médecine*, after premising the difficulty which is experienced by many persons in retaining on their stomach the balsam or the cubebs, especially after these medicines have been used for any length of time, advocates their introduction into the rectum. From the month of July, 1826, to the present date, he has pursued this method of employing the balsam in twenty-two cases of gonorrhœa. The dose was from two to four drachms in a suitable vehicle, to the extent of four ounces, to be repeated daily for eight days if necessary. The following are the conclusions at which Dr. Velpeau has arrived:

The balsam copaiva administered per anum diminishes almost invariably the gonorrhœal discharge in both sexes. In many instances it completely stops it at the end of four, five, six, seven or eight days; more frequently it merely reduces it to one third of its usual quantity; sometimes only to one half; and as a general rule after the eighth or tenth dose, its action becomes of no avail, if it have not previously proved completely efficient in the cure. He subsequently recommends a gradual augmentation of the dose; so that

beginning with two drachms, he gives on the next day four drachms, and so on, until in some subjects who tolerate the medicine without difficulty, eight drachms are taken at a dose. The best vehicle is gum water, to which laudanum may be added, the better to insure its retention by the rectum.

Dr. VELPEAU has used the cubebs in a similar manner, and with the like success. Of four persons in the first stage of gonorrhœa, (the first fortnight,) only one was promptly cured. Five who had suffered for a long time under the malady, were entirely relieved. In conversation with Drs. RIBES, GUILLON, and DEFERMON, respectively, Dr. V. has learned that each of these gentlemen had employed the balsam copaiva in the manner above indicated; and, with the exception of RIBES, with equally happy results.

Dr. GUERIN DE MAMERS is preparing a work on this subject. Reference to the practice may likewise be found in some English journals.

26. *Cancer Cured by Compression.*—Dr. RECAMIER gives the detail of some cases of cancerous tumours of the mammæ, in which a uniform pressure continued for a length of time by means of bandages and agaric over the breasts, accomplished a complete cure in some, and in others was attended with a notable melioration of the disease.—*Revue Médicale, Janvier*, 1827.

27. *Savin in Excessive Uterine Discharges.*—Dr. GUNTHER, of Cologne, has succeeded in curing two women affected with metrorrhagia, by the administration of savin in scruple doses, four times a day. *Ibid, after Hufeland's Journal.*

28. *Epistaxis cured by the Patient snuffing up Powdered Gum Arabic.*—Such was the method recommended by Dr. BRUNNER, to a young man who had suffered three days from epistaxis, which during that time had proved untractable under all the usual remedies.—*Ibid.*

29. *Salivation cured by Calomel.*—The patient in this case was of a cachectic habit of body, with face œdematous, but no pain. The complaint was attributed to sleeping near a damp wall. The customary means of relief failing, Dr. GUMPER administered calomel in doses of one to two grains, three or four times a day for six days, with entire success.

30. *Sal Ammoniac.*—Dr. ARNOLD, of Heidelberg, published last year a dissertation on the properties and employment in disease of the hydrochlorate of ammonia. Administered to animals in large doses, this salt causes death. Its first action, according to Dr. A., is on the spinal marrow, and hence the irregular and vehement action of all the organs under the control of this nervous centre; since, independently of the affection of the limbs, the respiration was very irregular, slow, and deep, the pulsations of the heart strong, and perceptible through a great extent of the chest. From this disturbance in the circulatory and respiratory functions, ensue a defective elaboration and oxygenation of the blood; so that death is brought about as much by the prostration following the great irritation of the nervous system, as by the imperfect oxygenation of blood in the lungs.

As a remedy in disease, though its use demands caution, it will prove unquestionably serviceable on many occasions. Among the cases in which it is thought to be more particularly indicated, we find deranged secretion and excretion, especially of the mucous membranes, of the lungs, intestinal canal, bladder, and genital organs, as in mucous catarrh, diarrhœa, catarrhus vesicæ, gonorrhœa, untractable to the balsam copaiva and cubebs, and leucorrhœa. In the *phlegmasiæ*, so called, it is given with most advantage after the more violent inflammatory symptoms have been subdued by bleeding: it then seems to lower excitement by a diminution of the plastic or coagulating power of the blood. In consequence of its direct tendency to produce inflammation of the stomach, this salt is emphatically contraindicated in all those diseases in which there is a true phlegmasia of this viscus. In croup it may be given at the same time with calomel; and it is recom-

mended also in the catarrhal stage of hooping cough, and in the *anginose* affections.

In *hepatitis* we are enjoined to substitute, as speedily as possible, the sal ammoniac for mercury; always holding in mind the state of the stomach. Indurations of the prostate gland, and of the ovaries and uterus, have been cured by this medicine. It is also recommended in scrofula, though here the preferable mode of using it is by bath.

31. *Carbonate of Iron in Neuralgic Affections.*—Under this head we find copied into the Medico-Chirurgical Review, from No. 174 of the Lancet, an account of two cases: one of neuralgia of the lower extremity from the toe to the groin, and across the lower part of the abdomen round to the loins, in a female; the other presenting some of the phenomena of angina pectoris. Both were cured by the administration of the carbonate of iron in doses of *half an ounce* three times a-day. It seems now to be conceded that this medicine may be given in much larger doses than have usually been prescribed. For ourselves, we have long been satisfied on this point. It is now nine years since we administered, by which we mean actually mixed up with syrup, and saw swallowed, half an ounce of the carbonate of iron by a sea captain, then under our care for tenia. On referring to our notes of this case, we find the only observations made, were, that the bowels were once moved on the day following the evening on which the medicine had been taken, and that *the pulse was much weakened, an effect this which was of invariable occurrence during the period of the use of the carbonate.* We began it in a dose of a scruple; and in the course of a week, increased it to half an ounce. To the same person we have given a drachm of the carbonate, and an equal quantity of the sulphate of iron at a dose in the evening. The bowels were once moved during the following day; the pulse was full, but without hardness or frequency.

32. *Insufflation of the Lungs, a Cure for Asthma.*—In the first volume of the Journal des Progres des Sciences et Institutions Médicales en Europe, en Amerique, &c., the appearance of which we hail as promising to be a valuable contribution to periodical medical literature, we find copied from the *Antologia di Firenze*, an account of the above-mentioned means against asthma employed by Dr. Francesco Chiarenti. Taking the hint from the relief afforded to the asthmatic by their exposure to fresh air, especially a current of wind, the Italian physician, himself a sufferer from the disease, had recourse to pulmonary insufflation performed by a common bellows, the muzzle being introduced into the mouth. He had the bellows played on him for a considerable time, and with much force, so as to introduce a great quantity of atmospherical air into the lungs. By this simple process he can now overcome, in a very brief period, the most violent fits of asthma. The trial of the remedy on others was equally successful as on himself; and from a number of facts, the more detailed history of which he promises hereafter, Dr. Chiarenti is of opinion, that insufflation, practised in the above manner, is not only adequate to causing the prompt cessation of a paroxysm of asthma, but still more to accomplishing a radical cure of the malady, unless when it arises from organic alterations of too deep and enduring a nature.

33. *Belladonna employed with success in Intermittent Fever.*—In a pernicious intermittent fever, accompanied by cephalalgia or delirium, the first paroxysm of which had been rather exasperated than enfeebled by the sulphate of quinine, the extract of belladonna in a dose of twelve grains, administered just before its expected return, prevented the fourth paroxysm, and the patient was soon restored to health. Dr. Ducros, of Marseilles, the prescriber of the medicine, and reporter of the case, adds, that on fresh exposure to the marshy banks of the Rhone, the disease returned,

and was again cured by the extract of belladonna.—*Journal des Progrès des Sciences et Institutions Médicales, &c.*

34. *Chronic Ulcer in the Stomach.*—A married female, so corpulent that she thought herself dropsical, and who appears to have been thought so by her physician, had complained of pain occasionally at the navel for years previously. This, however, did not prevent her attendance to domestic affairs, and her spirits were good, as was her appetite. On the 16th of August 1826, after eating a very hearty dinner, she was suddenly taken ill with severe pain in the umbilical region, attended with exquisite tenderness of the part. The pulse was but little affected. After taking about thirty drops of laudanum, she vomited a quart of fluids and half digested substances, but without any material relief. Opium in considerable quantities, venesection, blisters, and other remedies, were employed in vain, and she expired in thirty hours from the attack.

On dissection, an ulcer was found near the lesser curvature of the stomach, about two-thirds of an inch in diameter, and partly surrounded internally with thickened white and shining edges. This had opened and permitted the contents of the stomach to pass out into the abdomen, thereby occasioning the fatal catastrophe. The heart, as well as other parts of the body, was loaded with fat.—*London Med. and Phy. Journ. Jan.*

35. *Extract of Balsam Copaiva in Gonorrhœa.*—Mr. THORN, in an essay, recently published, on the Treatment of Gonorrhœa, recommends the above-mentioned preparation (the resinous extract deprived of the essential oil) as a remedy for the cure of this disease. Medical men have generally been afraid to exhibit the bal. copaiv. in the second or inflammatory stage, and the first stage (that occurring within twenty-four hours of the first appearance of the symptoms) has often elapsed before they are consulted. It is in the first two stages, that the extract of copaiva has been found most advantageous. Mr. THORN has related one case where the disease was cured in a couple of days, when the medicine was given in doses of fifteen grains to a scruple thrice daily. In the inflammatory stage, where there were symptoms indicative of approaching swelled testicle, he has not hesitated to give the extract in doses of ten or fifteen grains thrice a day. In no case has he found it to produce any other effect than that of relieving the scalding, and frequently doing away with this symptom in a short time. The medicine should, of course, be continued for a few days after all the symptoms are gone. Mr. T. very properly embraces the depletory treatment with cooling regimen with the exhibition of the medicine.

In the third stage, that of gleet, too often dependent on some alteration of structure in the mucous membrane, the extract of copaiva has not proved so useful. Our author speaks favourably of an injection composed of one drachm of extractum tormentillæ to six ounces of water.—*Medico-Chir. Rev. April.*

36. *Pleurisy and Abscesses after Surgical Operations.*—M. ALF. VELPEAU, in the Revue Medicale for December, 1826, has furnished some interesting cases of death occurring after injuries of a limb, or part in which amputation or a surgical operation had been resorted to. He sums up as follows:

1. That those who die of acute diseases succeeding surgical operations, or profuse suppurations, generally fall victims to pleurisy and to the formation of abscesses, more or less numerous in the viscera.

2. That the kind of pleurisy, hitherto undescribed, is of a peculiar nature, and might be denominated the "pleurisy succeeding operations."

3. That this disease differs from simple pleurisy, in the latency of its march, the rapidity of its progress, and the almost invariable certainty of its fatality.

4. That the purulent depots above described, never acquire a large

volume, but are circumscribed, and spherical collections of matter, concrete or fluid.

5. That they are more especially developed in the liver and lungs, where they may give rise to a species of tuberculous affection.

6. That the pleurisy and formation of depots are rarely accompanied by characteristic local symptoms, sufficient to give notice of their existence.

7. That these said inflammations and depots are manifested under the influence of absorption of pus, and of its transport into the current of the circulation.

8. That general blood-letting appears to favour the development of the maladies in question.

9. That finally, where the existence of the malady was unequivocal, the march of the disease has hitherto been unchecked by any medical treatment employed.

Admitting as we unhesitatingly do the facts, and Dr. VELPEAU is not the first to notice them, we are far from giving our assent to the explanation furnished by this gentleman, viz. that the unfavourable termination depends on the absorption of pus; which seems, however, to have met with the approbation of our respected contemporary of the Medico-Chirurgical. That the fluids circulating in the vessels play an important part in the drama, must be acknowledged; but if "deleterious fluids are taken up by the absorbents, in cases where parts do not heal kindly, after wounds and operations," we would ask whether these poisons should not more readily and naturally display their pernicious operation on the brain and nervous system generally, and also on the digestive apparatus, than on the pleura and lungs, or liver? Is it by the absorption of ill conditioned pus, that we explain the diseases of the lungs or liver which ensue after hastily repelled eruptions, or the drying up of a long discharging issue, or the radical cure of fistula in ano, or the sudden disappearance of rheumatism, or gout of the extremities, or injury of a limb without suppuration, or where the wound has been cicatrized? The assumption of metastasis does not, by any means, imply a credence in the translation of a morbid or peccant matter. Sympathy, with all the vagueness of ideas so often attached to the word, is just as significative and explanatory of the diseases subsequent to injuries and surgical operations, as the absorption of pus. We have said that M. VELPEAU is not the first who noticed the facts connected with this subject. That distinguished surgeon DUPUYTREN did, to our knowledge, seven years ago direct the attention of the students attending the Clinic of the Hotel Dieu, to the frequent occurrence of pleurisy after amputation of a limb, especially in scrofulous habits, in whom there had been a suppurative discharge from the diseased member. To prevent such a melancholy event, he was in the practice of applying a blister to the inside of the arm, so as to establish a free discharge before the operation, and take off the onus from the chest. He did not fear the absorption of pus and its deleterious influence, but desired, like an experienced pathologist, to substitute one action or drain, for another action or drain; in fact, to create an organ of secretion in the place of that removed by his knife. In the examination of this question, we ought to learn distinctly what were the temperaments, predispositions and former diseases of the victims to this new kind of pleurisy, and their accidental exposures in the hospital to currents of air, so frequent a source of this malady in such establishments.

37. *Acetate of Lead as a Sedative in Cancer.*—A number of females affected with incurable and most painful cancers of the rectum or uterus, have had their sufferings greatly mitigated by warm baths, in each of which was dissolved an ounce of acetate of lead.

38. *Remittent Broncho-Encephalitis.*—Under this head M. BROUSSAIS has

related a curious case in his journal, (*Annales de la Med. Physiol.*) for October last. The patient, a young man, was attacked with symptoms indicative of inflammatory action in the bronchial membrane, and also in the brain, with violent exacerbations; during which the cough was incessant, and the cephalalgia greatly aggravated by the successions of the cough. After three bleedings from the arm, and several applications of leeches to the temple and neck, the disease took on a decidedly periodical character, and then the sulphate of quinine was administered, with an allowance of light nourishment, especially as no symptoms of gastric irritation were present. The appetite was good and the tongue clean. The medicine but slightly mitigated the paroxysms of coughing; and presently the skin became permanently hot and dry, the bowels irritable, and the embarrassment of the chest increased, the expectoration being viscid and brought up with difficulty. The sulphate of quinine was discontinued, and leeches were applied to the lower part of the trachea. The strict antiphlogistic regimen was again adopted. This plan was crowned with success. "What," says BROUSSAIS, "would have been the result if we had persevered with the febrifuge, because the disease assumed a periodical character? The patient having lost much blood, the inflammation might not, perhaps, have assumed an acute character; but certainly a chronic gastro-enteritis would have been established, and possibly the bronchial inflammation would have been converted into suppurative pneumonia." —*Medico-Chirur. Rev. April.*

39. *A Case of Abdominal Tumour, complicated with Ascites, treated by large Doses of Hydriodate of Potassa.* By EDWARD JENNER COXE, M. D. (continued from page 397 of the last number of this Journal.) Before proceeding to give the additional particulars of this case, it may be proper to correct an error in the first communication. At page 397, hydriodate of iodine is printed in two places instead of hydriodate of potassa.

The patient was again tapped, March 20th, 1827; and after all the water had been drawn off, the tumour in the abdomen seemed less hard than after the preceding operation, though no material difference was observed in its size. On the 24th, our patient again commenced taking the hydriodate of potassa ʒi. to ʒij. of water, thirty drops three times a-day, to be increased ten drops each succeeding dose, beginning the increase on the 25th. From the 29th of March, until the 29th of April, twenty-eight drachms of the hydriodate of potassa in solution were taken by our patient; making together with the drachm previously prescribed, 1740 grains during a period of five weeks. As the medicine produced no effect whatever on her system, it was discontinued.

This medicine having been used with great success by some physicians in this country, and in Europe, the above case only proves that there are some peculiarities of constitution, capable of resisting the action of the most powerful remedies.

It may not be amiss to state, that the preparation of iodine used, was procured from Mr. DURAND of this city; so that there can be no doubt as to its genuineness.

V. SURGERY.

40. "*Ligature of the Arteria Iliaca Communis at its Origin.*"—Professor MOTT of New York has recently performed this operation for the cure of an aneurism, which occupied the whole extent of the vessel from within the

ligament of Poupart to some distance above the origin of the internal iliac artery. The tumour was of large size, protruding the belly considerably at the iliac region; the patient suffered most excruciating pain, which appeared to increase as the tumour enlarged. Dr. MOTT's incision extended from the external abdominal ring, to one or two inches above the crest of the ilium, dividing the tendon of the external oblique, and cutting through part of the origins of the internal oblique and transversalis. He then cautiously raised the peritoneum with his fingers, and succeeded in detaching it entirely from the tumour and vessels, without doing it the slightest injury.

"The artery was then examined, and the aneurismal dilatation was found to cease at about half the distance between the bifurcation of the aorta and the origin of the internal iliac branch. The ligature was passed from the outside of the vessel, by the aid of the excellent instrument devised by Drs. Parrish and Hewson, carefully avoiding the iliac vein. The protrusion of the intestines rendered this part of the operation the most difficult. After the ligature was passed around the vessel, the wound was held open in such a manner as to allow the medical gentlemen present to see, and satisfy themselves of the exact situation of the ligature, which was just below the bifurcation of the aorta into the primitive iliacs, and on the side of the sacro-vertebral promontory. The ligature was then drawn tight and secured; the pulsation of the tumour ceased; its size was much diminished, and the patient was relieved from the agonizing pain, previously unremitting.

"The wound was lightly dressed, and patient put to bed; the limb of the side operated on was cold, as might be anticipated; it was wrapped in cotton, and covered up to preserve the temperature until the circulation should be restored. To the great surprise and satisfaction of the surgeon, in a little more than half an hour after the operation, the circulation and temperature were entirely restored, and all fear respecting the supply of blood to the limb effectually dissipated.

"No untoward circumstance occurred after the performance of the operation. The patient complained of no inconvenience, except a peculiar sensation of fulness or tension in the limb, as if the small vessels had not yet become accustomed to their new office in sustaining the great mass of the circulation for the support of the member."—*Philad. Jour. of the Med. and Phy. Sci. for May.*

This is the second time, the bold operation of tying the common iliac artery has been performed; and in both instances by American surgeons. It was first resorted to fifteen years ago, by Dr. GIBSON, professor of Surgery in the University of Pennsylvania.

During the riots in Baltimore, in the year 1812, a man received a wound from a musket ball. As the accident occurred near to where the professor was standing, he promptly examined the wound which he found bleeding with great profuseness. He thrust his finger into the wound, and with it compressed the bleeding vessel, until the patient was carried home. From the direction of the wound he supposed the injured artery to be the common iliac near its bifurcation.

Though the patient was much exhausted by the hemorrhagy, yet he determined to make an effort to save him by securing the artery. The integuments of the abdomen above and below the wound were divided. "The peritoneum was next cut through, the intestines were turned to one side, until the artery was exposed, and slightly detached from the parts in its immediate vicinity." Ligatures were now applied around the left common iliac artery above and below its division. He next turned his attention to the intestines which were opened in two convolutions. The aper-

tures in the intestines were drawn together with a fine ligature, upon the plan suggested by Sir ASTLEY COOPER. The clotted blood was removed from the abdomen, and the external wound closed.

As might be expected, coldness of the left limb followed the injury and operation, but the following day the temperature increased, and continued to increase, until it rose to nearly the heat of the opposite leg.

On the fourth day, symptoms of peritoneal inflammation supervened.

On the ninth day, the patient was seized with secondary hemorrhage, which, at intervals, continued until the thirteenth day, when the patient expired.

On opening the abdomen after death, the folds of the intestines were united to each other in every direction by inflammation. "The upper ligature was found detached from the vessel, which projected and preserved the circle of its mouth entire." No union whatever had taken place between the sides of the artery. The impaired vitality of its coats, arising from contusion, was sufficient to prevent their union by adhesive inflammation.

The bullet was found imbedded in the upper part of the sacrum.

The result of this operation satisfactorily proved, as Dr. GIBSON very properly stated, "that the largest artery in the body, except the aorta, may be tied without cutting off permanently the supply of blood to the lower extremity, inasmuch as the operation may possibly become necessary in *cases of aneurisms of the external or internal iliacs.*"

When the embarrassing circumstances are considered under which this operation was performed, we cannot but admire the boldness and success with which it was executed. See Dr. GIBSON's paper in the 3rd vol. Philadelphia Med. Recorder.

41. *Laryngotomy or Tracheotomy.*—In the April number of the London Medical Repository, there is a short review of Mr. PORTER's work on the Surgical Pathology of the Larynx and Trachea, so as to determine in what cases "bronchotomy" ought to be resorted to. This book was published in Dublin, in 1826.

In *spasmodic* croup, it will be seldom necessary, as medical measures will generally be adequate, or the patient would perish before assistance could be rendered. In the *inflammatory* forms of croup, during the first stage, before effusion has occurred, "an incision will be much more likely to aggravate the disease than to relieve it;" an opinion in which we cannot concur, inasmuch as when respiration is impeded, and the inflammation confined to the larynx, this opening would certainly afford temporary relief to the breathing, allow the inflamed parts to be comparatively at rest, not to mention the loss of blood which would at least counteract the irritation of the incision. When the effusion of lymph has occurred, although it is very generally confined to the larynx alone, still, in a number of cases, the inflammation has commenced in the bronchial cells, and proceeded upwards to the trachea, in which case "an operation *could not possibly be of service*, and there is no mode of distinguishing accurately the original seat of the disease:" and whenever an adventitious membrane has formed, there is generally so much mischief already induced in the lungs, brain, &c. from engorgement, inflammation, or effusion, as to render success very problematical.

"At the *latter stages* of croup, it would be absurd to think that an operation could possibly prove beneficial, unless it be supposed that a wound of the wind-pipe could remove cerebral congestion; and, therefore, whenever convulsions have occurred, and the patient appears comatose or sinking, let no man undertake it, as a last resource, for it is a resource that will avail him little."

To these concluding remarks, we would direct professional attention; for we have reason to believe that the operation is often very empirically performed, and generally in these latter stages of croup. Let the surgeon remember the advice of Mr. A. Cooper, "never to do any thing without a *good* reason;" and let him ask himself distinctly what good can result from this incision. Recommending, therefore, Mr. Porter's observations in the strongest manner, we would nevertheless ask whether the surgeon should be deterred by the cerebral and pulmonary congestions from operating in those rapid cases of inflammatory or spasmodic croup, where there is *good* reason to believe that effusion had not ensued? We should answer negatively; for the want of air is the cause first of the pulmonary and secondarily of the cerebral congestion. Affording an access, therefore, for this fluid to the bronchial cells, will be a powerful adjuvant to the usual remedies for congestion, and may render them successful.

In laryngitis œdematosa, where there is an effusion of serum in the submucous tissue of the larynx obstructing respiration, laryngotomy promises much, and should be very early resorted to. The only difficulty respects the diagnosis. Sir Gilbert Blane says, it is characterized by a difficulty of deglutition, accompanying the obstructed respiration, but this is not sufficient.

In chronic cynanche laryngea, (including all those diseases which proceed very gradually and insidiously,) which has resisted appropriate remedies, or been injudiciously managed, bronchotomy is the only remedy. In a simple thickening of the mucous membrane of the larynx, it will often be completely successful, allowing free respiration, and permitting the inflamed parts to be *at rest*.

Since writing the above, we have received the *fourth volume of the Dublin Hospital Reports*, with which we have been politely favoured by the editors; and find, that Mr. Francis White has performed tracheotomy in a case of cynanche laryngea, accompanied with some effusion into the trachea, and which would perhaps contravene some of the advice above given. The case is so interesting, that we will furnish the most important particulars.

John Duff, aged thirty-three years, had sustained a severe attack of fever, followed by hoarseness, a hard dry cough, and soreness of throat. From exposure, these symptoms increased; and on the 10th of March, 1825, Mr. White found him labouring under all the symptoms of croup. He was bled freely, and leeched: calomel, antimony, and ipecac. in large doses, afforded little relief, even when his mouth was touched.

On the 13th, all the symptoms augmented, and suffocation was threatened, so that tracheotomy was the *last resource*. On dividing the rings of the trachea for half an inch, the air escaped with considerable force, and much muco-purulent matter was expelled. Finding a mere division not sufficient to allow a free discharge of the accumulated fluid, which was of a viscid ropy nature, Mr. W. *cut off lateral slips of the cartilages*, which leaving ample space, the patient breathed with freedom, and expectorated large quantities of mucus. A silver cannula could not be borne, and no instrument was required. The improvement was most evident, and the relief from impending suffocation immediate. A severe ptyalism ensued. In six days the wound began to close by granulations, which were, therefore, cut away. A leaden cannula was now tolerated.

On the 14th of April, the symptoms returned, and the tracheal opening had to be enlarged. Mr. W. "introduced an ivory cannula of a conical shape, and slightly curved, which filled up the entire opening, but was only admitted so far as to lie in contact with the edges of the tracheal aperture."

The patient (March 17th, 1827) has continued to wear this instru-

ment attached to a leathern stock, it being occasionally removed to wipe away the mucus. During the two years, since the operation was performed, the patient (a cabinet-maker) has worked at his trade without any inconvenience. The opening is callous and cicatrized. "The rima glottidis remains closed, yet not so much so but to yield to slight expiration, while he is incapable of performing the act of inspiration through the glottis, or of speaking without closing the aperture of the cannula with his finger."

42. *Angina Œdematosa.*—M. Lisfranc communicated to the Section of Surgery, a case of œdematous angina; a disease which, according to him, is characterized by the sensation of a foreign body, ascending and descending in the pharynx during inspiration, deglutition, &c. The patient was threatened with suffocation, but was relieved by Lisfranc, by scarifying the diseased part by means of a bistoury slightly curved, and covered with a bandage, excepting near its point, and afterwards making slight pressure to evacuate the fluids.—*Archives Générales for March*, 1827.

43. *Fracture of a Lumbar Vertebra with Paralysis.*—Accidents of this kind have been generally regarded as beyond chirurgical assistance. Lisfranc has reported a case to the Section of Surgery, of fracture of the third lumbar vertebra, causing deformity, and accompanied with a paralysis of the abdominal muscles, rectum, bladder and lower extremities. A strict antiphlogistic course was adopted; abstinence, frequent bleeding, general and local, moxas, &c. On the fourth day, the bladder and rectum recovered their functions; on the twentieth day, the patient could raise the right leg and thigh; by the fortieth, this movement could be made with the left limb; and *now*, after two months and a half of treatment, the patient can walk without assistance of a cane or crutch. Another case has also been cured.—*Ibid.*

44. *Fracture of a Cervical Vertebra by Muscular Contraction.*—In the Archives Générales for March, a case is recorded, as reported to the Royal Academy of Medicine on the 8th of Feb., of a soldier, a good swimmer, who plunged head-foremost into the river Sambre, and was taken up in an insensible state by his comrades. On reviving, his limbs were found paralysed; skin insensible. The patient could not support his head, and experienced a severe pain at the posterior and inferior part of the neck. Priapism with frequent desire to urinate, was present. He stated, that immediately on plunging, he found the depth of water inconsiderable, and had suddenly thrown his head back that it might not be injured: from this moment, he lost all consciousness. The patient died, and on opening the body, a bloody infiltration was discovered around the cervical vertebræ: the spinal canal, *outside* of the dura mater, was filled with blood. This membrane as well as the spinal marrow was uninjured, while a transverse fracture of the body of the fifth cervical vertebra, a little below the middle, was noticed.

45. *Fracture of the Os Femoris by Muscular Contraction.*—In the Arch. Générales for March, this accident is said to have occurred in a man aged fifty-five years, infirm, and suffering, since 1816, with *convulsive motions from the use of nux vomica.* The bone gave way, while the individual was turning the leg inwards with his left hand.

46. *Fungus Hæmatodes at the Neck of the Bladder.*—Dr. Lazzerini of Florence has related a rare case of fungus hæmatodes, half the size of a pullet's egg, situated at the neck of the bladder, in a man sixty years of age. The disease had been mistaken for a varicose condition of the neck of the bladder, from the symptoms manifested during life, especially from the bloody evacuations following the introduction of the catheter. *Post mor-*

tem, it was found that the catheter had penetrated the tumour in five different places, which had been mistaken for "false passages" during life.

We extract this from the 2nd vol. of the Journal des Progres des Sci. Med., which has just been received.

47. *Empyema.*—M. DUFOUR punctured the cavity of the thorax of a child, four and a half years old, with effusion from a chronic pleurisy, with immediate relief and subsequent recovery.—*Journ. Univer. Jan.* 1827.

48. *Rupture and Re-union of Tendons.*—In the 3rd vol. of the Philadelphia Medical and Physical Journal, Dr. HORNER published a case of ununited rupture of the tendo achillis, which he treated by means of the seton, on the plan recommended by Dr. PHYSICK for artificial joints in the bones. The operation was performed in April, 1826, and in August following, the patient could walk without extraneous aid; the parts being reunited. That this practice is indeed applicable to tendons, as well as to bones, where union has not been effected, has been doubted; and it is with pleasure we can report from the same journal for May, 1827, the interesting experiments of Dr. FEARN, as confirming the above fact, and at the same time demonstrating with how much impunity tendons may be wounded, and how strong their recuperative powers, when not injudiciously controlled by an officious and ignorant interference.

Experiment 1st. July 21st, 1826. The posterior third of the tendo achillis of a dog was divided through a small puncture, and the animal set at liberty. This was followed by a complete rupture of the remaining fibres. No union ensued. *Oct. 21st.* No union; extremities separated an inch and a half, and loose. Seton was introduced, and limb dressed with splint and bandages. These were all removed on the thirteenth day; the dog did not use the limb. *Nov. 21st.* Re-union perfect; tendon enlarged through its whole length. Dog was killed: tendon found of a *uniform* thickness; rounder and harder than its fellow; colour less bright than in a healthy tendon.

Experiment 2nd. Dec. 27th. Division and rupture of tendon as before. Dog turned loose, and afterwards killed, Jan. 25th, 1827. No traces of inflammation. Extremities of tendon separated for two inches and rounded. No attempts at re-union.

Experiment 3rd. Nov. 28th, 1826. Tendo achillis ruptured in a sheep, and seton at the same time introduced. *Dec. 5th.* Parts inflamed, indurated; some suppuration. *Dec. 15th.* The seton removed; suppuration free; induration less prominent. A roller and splint applied. *Dec. 30th.* Ends of tendon separated for two inches, dense uneven cord connecting them. Sheep killed. A vertical section of the exposed tendon, presented a dense white cord, connected above to the tendon, sheath, and cellular parts, and extended uniformly downwards to the extremity of the inferior fragment, where it turned off, to adhere laterally to the tendon and its envelop; so that the extremity of the old tendon, for three-fourths of an inch upwards, was enclosed as if by a sac, filled with sanious blood.

Experiment 4th. Somewhat varied from the preceding. *Dissection* in a month proved, that the extremities of the fragments did not unite, the intervening substance being connected to them laterally. A fine injection demonstrated the vascularity of all the parts, excepting the extremities of the fragments.

Experiment 5th. In this, nearly all the fibres of the old tendon were found united to the new intermedium. A few only were found loose and of a dull yellowish colour.

Experiment 6th. The tendon of a puppy was divided, and the animal

turned loose without dressings. In twenty-one days it was killed; no intervening substance perceptible; some slight adhesions laterally; the surrounding parts vascular.

These experiments tend to prove, 1st, that tendons will not unite when motion is allowed from the time of accident.

2nd. That when at rest, union will ensue by a deposition from the cellular membrane, from the sheath, and from the substance of the tendons under very favourable circumstances: in other cases, that the lymph is effused from the cellular tissue and envelop only; the extremities of the tendon dying, and becoming eventually absorbed; their place being occupied by a further deposition of lymph so that the whole cord becomes uniform.

3rd. That when union has not occurred, and the extremities of the tendon have been rounded by absorption, union may be effected by inducing inflammation, and the consequent deposition of lymph by means of a seton, so that the functions of the parts may often be restored.

The practical deductions from these facts may be readily drawn.

49. *Traumatic Tetanus, cured by Tobacco.*—Dr. Jos. C. Skinner relates in the Philadelphia Journal for May, a case of opisthotonos immediately relieved by an enema of an infusion of tobacco. (℥ss. to a pint of water.) The enema was followed by violent pain in the bowels; with relaxation of the tetanic spasms, profuse perspiration, and finally a quiet sleep. In six hours after, a slight disposition to a return of the spasms being observed, the injection was repeated, and laudanum exhibited by the mouth with relief. The patient recovered.

50. *Incontinence of Urine.*—M. Canin has cured, by the repeated application of dry cups to the perinæum, two young men of incontinence of urine, which had resisted the usual treatment. In one, a blister was also applied to the sacrum.—*Nouv. Biblioth. Med. Jan.*

51. *Axillary Aneurism.*—M. Roux has secured the subclavian artery above the clavicle for a spontaneous axillary aneurism. The patient had every prospect of recovery.—*Ibid.*

52. *Strangulation of the Intestines through a Congenital Opening of the Diaphragm.*—A young man died suddenly after vomiting excited by indigestion. Examination discovered, that a large portion of the intestines had been forced through an oval opening in the diaphragm, whose edges were smooth, and greatest diameter at least three inches, and were there strangulated.—*Archives Générales, Jan.* 1827.

53. *Strangulated Hernia, cured by Leeches.*—M. Sue reports a case of strangulated inguinal hernia, the reduction of which, after vain attempts by general bleeding and warm baths, was very easy and almost without pain, after the application of thirty leeches about the ring. MM. Gerau-St.-Rome, and Rampal, have communicated two similar facts.—*Ibid.*

54. *Section of the Uterus.*—M. Guillon has invented instruments for the amputation of the neck of the uterus, while this organ remains in its natural situation; and other instruments for the partial removal of the body of the uterus, after having previously procured an adhesion between the peritoneal surfaces of the uterus, and vagina, so that the cavity of the abdomen need not be exposed, &c. &c.—*Ibid.*

55. *Speculi.*—We noticed in our last number the urethro-cystic speculum of M. Segalas. The ingenuity of our transatlantic brethren is not yet exhausted. M. Bombolzini has devised a speculum "to explore the interior of the stomach, of the bladder, of the uterus, and finally of the large intestines."—*Ibid.*

56. *Paracentesis Thoracis performed a second time, after an interval of twenty-two years.*—M. Guerard, Jun., performed this operation for em-

pyema from a pleurisy, on a man who had been operated on for the same complaint, twenty-two years previously by M. GUERARD, sen. On the fifth day from the operation, the man got out of his bed. On the eleventh day, the discharge was much diminished, and the wound soon cicatrized. A year afterwards, the man was in good health, without cough or any difficulty in respiration.—*Archives Générales for Jan., from Horn's Archives for April*, 1826.

57. *Fracture of the Sacrum with Luxation of the Coccyx.*—A female aged thirty-eight years, fell from a hay-loft, upon a ladder, so that the whole force of the blow was received on the sacrum and coccyx. M. JUDES found her three hours afterwards, in a supine position, not able to move without great difficulty and severe pain. On examination, per rectum, the coccyx was found separated from the sacrum, and this last named bone fractured near its superior extremity.

In dressing the patient, M. JUDES introduced into the rectum, a cylinder of wood, five inches long, and three in circumference, and compresses were applied externally, assisted by a suspensory or T bandage, to keep the fragments in a proper situation. In three days, the apparatus was removed, and an injection administered. In forty-five days, the patient began to walk, and soon could move as easily as ever, and without pain.—*Journ. Med. de la Gironde, Sept.* 1826—*Bulletin Med. Feb.* 1827.

58. *Emphysema.*—A female child aged twenty-six months, while suffering under symptoms of bronchitis with a convulsive cough, during a paroxysm of coughing, "seized the bed on each side with its hands, contracting herself like a female in labour." Immediately afterwards, a sub-cutaneous emphysema was observed at the superior part of the thorax, on the face, and sides of the neck, which was attributed by her physician, M. VITRY, to the rupture of a pulmonary vesicle, or what is most probable, of some of the bronchial tubes. This happened on the 6th of Jan. 1826, and soon the distention affected the head, thorax, and abdomen, with increased symptoms of dyspnœa, cough, &c. Incisions were made into the cellular tissue, by which the air was discharged with immediate relief to the agitation, and feeling of suffocation. The cough diminished, and by the 20th of Jan., all tumefaction had disappeared. The little patient recovered her good looks and strength.—*Archives Générales, March*, 1827.

59. *Amputation in a case of Elephantiasis.*—Professor NAEGELE has related a case, (in the Heidelberger Klenishe Annalen t. ij.) in which he amputated the leg of a patient suffering with elephantiasis. The disease extended above the knee. The professor, however, preferred amputating below the knee, in the midst of the degenerated tissue. Some fever succeeded; a free suppuration was established; the contraction of the wound was facilitated by bandages; the stump diminished in size, and on the 4th of May, the patient was discharged with a cicatrix well formed, and with a good stump. The operation was performed on the 9th of Feb., the year not mentioned.

Professor N. does not consider elephantiasis as a specific disease, but simply as a case of hypertrophy.

60. *Foreign body, lodged in the Œsophagus.*—M. BEGIN relates, in the Journ. Univer. for March, the case of a gentleman, who swallowed, when eating hastily, a portion of a partridge's rib, which lodged in the thoracic portion of the œsophagus. A convulsive cough, with attempts to vomit, and extreme agitation were immediately excited. These soon disappeared; but in a short time, the patient, naturally of a good constitution and in robust health, lost his health and strength; "he became thin, morose and dispirited; his voice was broken; labour fatigued him; sleep was short, light, and frequently interrupted; digestion was difficult; when in the midst

of a paroxysm of coughing, terminated by an effort to vomit, he perceived a foreign and solid substance in his mouth." This proved to be the bone which he had swallowed, one end being very sharp, the other rounded. "Its body was corroded on its surface, and as if, in part, digested by the mucous fluids, [?] with which it had been so long surrounded." The patient recovered gradually from the dangerous condition to which he had been reduced.

This case is interesting, as demonstrating how all the organs sympathise with a local irritation; and we regret, that dates are not given, so that we can determine how long the patient had suffered.

61. *Excision of Carious Joints.*—In the fourth volume of the Dublin Hospital Reports, which we propose to analyze in our next number, there is, among many valuable papers, one by Mr. PHILIP CRAMPTON, on the Excision of Carious Joints, as originally recommended and practised, it is said almost simultaneously by Mr. PARK of Liverpool, and M. MOREAU pere, de Vas le duc; which operation, although *reported* by surgeons as successful, has been neglected for many years. Mr. PARK's first attempt was in July, 1781. In 1782, MOREAU operated in France, without, say his compatriots, any knowledge of PARK's success. The degree of success attending these gentlemen, and especially the numerous examples more recently recorded, of the successful removal of the extremities of the long bones in compound dislocations, has induced Mr. CRAMPTON to test Mr. PARK's practice by renewed trials on the human subject.

Case 1st, was a man aged twenty-three, in whom "the scrophulous aspect was distinctly marked; and who was sent to the General Hospital for a scrophulous white swelling of the right elbow joint of ten months' standing. The swelling extended at least a hand's breadth above and below the joint, with suppuration, deep ulceration, exposed caries of the bone, and constitution much impaired by hectic fever, sweats, &c. The operation of excision was performed on the 4th of Feb. 1823.

"The patient was placed, (as recommended by M. MOREAU,) upon his belly on a table covered with a mattress, and pillows so arranged as to make his posture as little inconvenient as possible; the diseased arm hung over the edge of the table, presenting its posterior and inner surface to the operator; the brachial artery being compressed by an assistant, an incision was now made along the spine of the inner condyle, commencing about four inches above, and terminating about two inches below its tuberosity. This incision passed through the centre of the ulceration, and laid bare the ulnar nerve, which was carefully raised from its groove, and drawn to the inner side of the incision.* A similar incision, parallel to the first, was made on the outer side of the humerus, and then a transverse section, which cut through the tendon of the triceps muscle, immediately above its insertion into the olecranon, connected the two longitudinal incisions, so that the wound represented pretty accurately the letter H.; the lateral incisions, however, being slightly incurvated, so as to follow the bend which the fore-arm made with the arm. The upper flap, consisting of the lower extremity of the triceps muscle, the thickened and diseased cellular substance, and integuments, was raised from the flat surface of the humerus, to which it had a very slight attachment; the lower flap was separated in the same manner, so as to lay bare the upper extremity of the ulna and radius; the scalpel laid on its flat was now pushed between the flexor muscles and

* "From neglecting this precaution in M. Moreau's case, the ulnar nerve was cut across, and the ring and little finger were deprived of the power of motion."

the bone on its anterior surface, at the distance of three inches above the tuberosity of the inner condyle, and retained in this situation by an assistant. The saw was then applied, and the bone was divided immediately over the flat surface of the knife, which served as a protection to the muscles beneath. The separated portion of the humerus was now raised with the utmost ease by the finger and thumb of the left hand, while the capsular and lateral ligaments, degenerated to the state of a lax cellular substance, were separated by running the knife round the condyles, keeping the edge as closely as possible to the bone. The lower extremity of the humerus being removed, the articulating surfaces of the radius and ulna were completely exposed; but, with the exception of the cartilage which covers the olecranon, (which was partially eroded,) every thing appeared sound. The olecranon was now removed, and the wound was sponged out; as there was no bleeding which rendered it necessary to have recourse to a ligature, the flaps were laid down, and secured to each other by four points of suture. The fore-arm was placed at a right angle with the arm; the wound was covered with pledgets of lint wetted with spirits and water, and the man laid in bed, with the arm supported on a suitable pillow.

"He passed the night remarkably well. Suppuration, attended with a very slight degree of symptomatic fever, set in on the fourth day; but, so favourable did every thing proceed, that on the ninth day he sat up in his chair, the arm being supported in a tin case, which I had constructed for the purpose. The wound, however, was slow in healing, no doubt from the bad constitution of the patient; I sent him therefore to the sea side five weeks after the operation, and there he recovered so rapidly, that on the following week he walked into town to see me, a distance of nearly five miles. He continued to reside at the sea side for three months, walking into town and returning on the same day once a week. On the 18th of September he returned to the King's Infirmary, in order to pass the board of general officers at the Royal Hospital for his discharge. At this time the wound, with the exception of a small superficial ulceration about the place which had been occupied by the inner condyle, was completely closed. The arm, when allowed to hang by the side, retained nearly a semi-flexed position; but, by a voluntary effort, he was able to give a slight degree of flexion to the fore-arm, so as to lessen the angle which it formed with the arm. He had the use of the fingers, so as to be able to use his knife and spoon; and on the 27th of November, 1823, *he signed his own discharge with the right hand.*"

This patient was soon after affected with a chronic or scrofulous abscess of large size in the loins, which manifests the depraved state of the system, which, nevertheless, could endure so severe an operation.

Case 2nd. *Excision of the Knee Joint.*—Susan Conolly, aged twenty-three, of a strumous habit; a former sufferer from scrofulous diseases, and of an emaciated appearance, has a white swelling of the knee joint, of about twelve months' duration, with pain, ulceration, caries, hectic, &c. &c. &c. Joint permanently flexed. On the 7th of May, 1823, the operation was performed in the following manner:

"An incision, commencing about three inches above the outer condyle, and a little below the axis of the femur, was continued to about an inch below the head of the fibula. The acute angle, which the leg formed with the thigh, necessarily gave to this incision the form of a crescent. In making the incision, the knife was carried down to the bone; a similar incision was made on the inner side of the joint. The lateral incisions were united by a transverse cut carried below the patella. The flap, thus formed, was raised by a rapid dissection, and the cavity of the joint was completely exposed: for the extent of more than three inches above the condyles,

the femur was without periosteum, the purulent matter lying in contact with the naked bone. At the point where the periosteum appeared to be united with the bone, the saw was applied, and the bone was divided, the soft parts being protected by a spatula which was passed between the muscles and the bone. The separated portion of the femur was now dissected out, and so slight were its connexions with the soft parts, that this part of the operation, which I expected would have been attended with some difficulty, was effected with the greatest ease. The articulating surface of the tibia was now fully exposed; it was totally deprived of cartilage, and was in a state of caries. By means of a strong and short knife, such as is used by shoe-makers, I was enabled to pare away about half an inch of the head of the tibia, the cancelli of which were loaded with a lardaceous matter, and with pus.

"The cavity of this great wound was now sponged out; when, upon minutely examining the cut surface of the femur, I found that the cancelli were diseased and filled with pus, and that posteriorly the periosteum was detached from the bone. I therefore sawed off about an inch and a quarter more of the femur. On placing the extremities of the femur and tibia in contact, the flap, containing the patella, was found to be about three inches too long; and as the patella itself was totally deprived of its cartilage, and in a state of caries, the exceeding portion of the flap, including the patella, was removed by a transverse incision. No artery was divided which required the application of a ligature. The flap was retained in its position by two points of the interrupted suture, and compresses wetted in spirits and water were laid over the wound. The limb was now placed in position in one of Assellini's "carrying splints," which had previously been carefully adapted to the size and length of the limb; it extended from above the trochanter major on the outside, and from the ramus of the pubis on the inside, to about four inches below the foot; it was supplied with a sole piece, which supported the foot, and was carefully padded with a mixture of baked hair and wool.

"The woman bore the operation, which was by no means tedious, with great fortitude; and indeed, when it is considered that very little muscular structure, and no large nerves or blood vessels were divided, it is probable that the pain was much less than is attendant upon an amputation of the thigh. However this may be, it is certain that the operation was succeeded by but little constitutional disturbance; and, to the great surprise of every one who witnessed the progress of the case, this great wound united by the first intention, and was healed in less than three weeks."

The patient continued to improve until the 12th of September, when she had an attack of erysipelas, at that time epidemic, followed by suppuration in the ham for three or four weeks, when it healed. Her health again improved. In November, another erysipelatous abscess reduced her, and two or three additional attacks of this kind diminished her strength. No degree of union had ensued between the bones, even by the 27th of June, 1824, when she was discharged in good health.

In the winter of 1825 and 1826, she was readmitted into the hospital in a wretched state of health, with hæmoptoe, purulent expectoration, and other phthisical symptoms, and a slight discharge at the fistulous opening in the ham. There was a general thickening about the joint. Her strength was again restored by suitable measures, and in May, 1826, she returned to the country; but soon after, in July, died, three years and two months after the operation.

Mr. C. thinks, that the want of bony union in this case, arose from the necrosed state of the extremity of the femur which was found denuded of periosteum, and its cellular structure filled with pus; from the diseased state

of the patient evinced by her previous scrofulous ulcerations, and her phthisical symptoms. Hence he did not hesitate to repeat the operation on another individual.

Case 3rd. Anne Lynch, æt. twenty-two, a strong good looking country girl, was admitted into Meath Hospital on the 3rd of May, 1823. No peculiar character of a strumous habit was evinced.

"About four years ago, she was seized with a sudden and severe pain in the right arm. The pain soon left the arm and settled in the right knee, which from that time continued to be, more or less, affected with severe pain, principally confined to the inner condyle. The pain was much increased by pressure on either condyle, by the slightest motion, and by the heat of the bed at night. The joint became perfectly stiff, and a good deal contracted, so that she could only touch the ground with her toe when standing on the left leg; and the swelling, which for the first few months was inconsiderable, gradually increased, and is now of a very great size, globular in its form, elastic to the touch, of a dusky red colour towards the inner side, and the surface intersected by numerous and large blue veins. She described the pain as being excruciating, particularly at night time. Within the last two months symptoms of hectic fever have manifested themselves, but upon the whole her appearance is not very unhealthy. She has lost but little flesh; and the treatment, both local and constitutional, to which she has been subjected since her admission into the hospital, has abated the pain, and improved her general health.

"On the 4th of August, the operation was performed, as in the case of Conolly, with this difference, that the poor girl, who, in coming into the operating room, exhibited the greatest fortitude, and even cheerfulness, on the instant that the knife was applied to the skin, became so ungovernable, that four strong assistants could, with the utmost difficulty, retain her upon the table. This necessarily prolonged the operation, and no doubt very much increased its severity. The removal of the divided extremity of the femur, which, in the case of Conolly, was effected with the utmost ease, in perhaps less than a minute, was here rendered a work of infinite difficulty and danger, as when the knife was passing between the popliteal artery and the bone, and actually in contact with the former, no entreaty could induce the poor girl, whom terror seemed to have deprived of her reason, to remain for one moment at rest; she struggled so violently with both limbs, that it was with a degree of labour and anxiety, such as I had never before experienced, that I at length succeeded in passing the edge of the knife round the condyles posteriorly, and thus detaching the divided extremity of the femur. The patella, which was carious, was removed with the lower portion of the flap, as in the case of Conolly, but the articulating cartilage of the tibia appeared to be sound. I pared away the greater part of it, however, and removed the semilunar cartilages, of which only the inner one exhibited any marks of disease.

"The treatment was conducted in all respects, as in the case of Conolly, with this difference, that I was obliged to resort to a variety of contrivances to keep the limb in position. The same unmanageable disposition, which caused so much embarrassment during the operation, greatly interfered with her recovery. Nothing could induce her to remain for one moment in any position which she found was attended with inconvenience; the consequence of these constant changes of position was, that the extremity of the femur was often protruded through the wound. Notwithstanding all this, and the occurrence of a large sloughy sore on the buttock, in consequence of an insufficient attention upon her part to cleanliness, her general health was but little impaired: a small exfoliation took place from the extremity of the femur, and in about two months she was

removed from her bed to a chair. In about four weeks after the exfoliation of the femur, the wound was completely healed, and the limb had acquired a considerable degree of firmness. About six months after the operation, the femur and tibia were consolidated by a firm bony union; and the woman, though timid beyond all example, began to lay her foot gently to the ground, supporting the weight of her body, however, on crutches. She now went to the country, and in the month of October, 1824, I received a letter from my friend and pupil, Mr. Rynd, of which the following is an extract:—"Your old patient, Anne Lynch, *walked* from Kilcock to Johnstown house, (a distance of nearly five miles,) to see me this morning. She is in excellent health, and the limb is perfectly firm, though bowed outwards." Anne Lynch has been frequently in Dublin since that period, and has presented herself for examination at most of the hospitals. She is now in town; and I have this day, Nov. 3, 1826, examined the limb, and find that the femur and tibia are firmly consolidated: the leg and thigh are not in the slightest degree wasted, but the limb is considerably bowed outwards. She wears a shoe with a cork sole, four inches thick; and, to use her own expression, 'is able to stand or walk the length of a day.'"

In repeating the operation of excision of the knee joint, Mr. C. would operate rather differently. From repeated trials, he is satisfied, that he can operate most safely and rapidly, by separating the condyles from all their attachments, previously to sawing the bone. He proposes to raise the flap of the patella upwards, and to divide *all* the ligaments connecting the femur with the tibia, by carrying the knife round the condyles close to the bone: then the tibia can easily be pushed backwards, and the projecting condyles removed.

62. *Un-united Fracture of the Tibia cured by Seton.*—The benefits conferred by our fellow citizen, Dr. PHYSICK, by proposing the use of a seton in the treatment of unnatural joints, are daily increasing.

In the fourth volume of the Dublin Hospital Reports, Dr. JOHN BROWNE details a case, in which it was successfully employed in an un-united compound fracture of the tibia in a patient sixty years of age. The accident happened on the 3rd of August, 1825: on the 7th of September, he was admitted into the Meath Infirmary; but on the 5th of November, there was a soft union, allowing of motion between the fragments of the tibia. At this time the seton was passed.

Dec. 17th. The seton has been gradually pushed by the new bony depositions, from its original channel between the fragments; and, being confined simply by the integuments, was removed.

Jan. 19, 1826. Fracture firmly united, wound healed.

VI. MIDWIFERY.

63. *Pregnancy with Ascites.*—In the London Medical and Physical Journal for May, Mr. JAMES RUSSEL relates a case in which he tapped a female, near the close of the sixth month of her pregnancy, and thus afforded her great relief. The operation was performed on the 20th of June, 1826. On the 5th of July, she was able to walk a mile to visit her surgeon. On the 24th, labour supervened: the child was born alive, and continued to live for ten days. The mother returned very soon to her laborious occupation, and on the 23d of September, she was again tapped with relief to her urgent symptoms. The fluid afterwards re-accumulated.

64. *Pregnancy after Amputation of the neck of the Uterus.*—M. LISFRANC reported to the Section of Surgery in December, that the female whose

case was noticed at page 402 of our last No., as being pregnant after amputation of the cervix uteri, was safely delivered at the full period of gestation, after a labour of one hour's duration.—*Nouv. Biblioth. Med.*

65. *Pregnancy with Aneurism of the Heart.*—M. Costa related to the section of Medicine, the case of a female in the eighth month of pregnancy, suffering from an aneurism of the heart, and threatened with suffocation. She was relieved of this urgent danger, by a premature labour accidentally occurring.—*Nouv. Biblioth. for March.*

66. *Difficult Labour.*—MM. Martin and Rigord were called to a female in labour for four days, the membranes having ruptured with little or no discharge of fluid. They discovered, that a new tumour, apparently like a new collection of water in the membranes, was formed of the abdomen of the fœtus, which contained water or diseased viscera. Delivery by the feet was attempted without success, and as the infant was dead, a bistoury was plunged into its abdomen. This operation was followed by the discharge of sixteen or eighteen pounds of liquid, after which the labour was easily finished. The fœtus had no cranium, and presented on the posterior and superior part of the face, a *Fungus Hæmatodes;* many of the ribs and of the pelvic bones were wanting, and the fœtus otherwise deformed. The abdomen contained still an encysted tumour, which, when opened, discharged a pound of yellow water, and its parietes were rough and slightly ossified.—*Arch. Gener. Jan.* 1827.

67. *Retention of the Placenta.*—Dr. Prost, physician at Vienna, has related two cases of retained placenta, with the view of demonstrating that this accident is not as dangerous as usually imagined. In one, a female 21 years of age, had an abortion about the fourth month, on the 12th of April, 1824. The placenta was retained. No fever ensued, and convalescence was favourable. The menses did not re-appear until the 14th of August, when they were inordinate. On the 15th of September, Dr. P. found this patient much exhausted, and confined to bed. The uterus was enlarged, the os uteri would not admit a finger; and, since, no accurate diagnosis could be made of the state of this organ. On the 30th of September, pains, similar to those of labour, supervened; the neck of the uterus would now admit the introduction of two fingers, so that portions of the placenta were extracted, and the whole was finally removed by the uterine contractions. The loss of blood was considerable from inertia of the uterus, and threatened life, but was arrested by exhibiting the *ergot.* The convalescence was tedious and painful; the lochia continued for more than two months, and after six months, the patient had not recovered her strength, owing, says our reporter, to the habitual use of vinegar, while her menses returned every twenty or twenty-one days, profusely. On examining the expelled mass, there could be no doubt that it was formed of the placenta, *augmented in volume,* forming what authors have termed a mole.

In the *second* case; there was an abortion on the 7th of June, 1825, in a female, aged twenty-five years, and about five months advanced in pregnancy. The placenta was retained, and no attempts were made to extract it. On the 19th of September, one hundred days after the abortion, the placenta came away. "The female had constantly lost blood every day, from the moment of the delivery of the embryo, to that of the placenta; she was weakened, and exposed to colics the whole of this period."

The convalescence was happy, and health completely re-established on the 9th of October following.—*Jour. Univers. Feb.*

From these facts, it is to us surprising, that Dr. Prost should deduce the propriety of remaining inactive, and allowing the placenta to be retained. Certainly, it is no argument for this practice, to say, that two young

females did not die, because the placenta was retained, when both were great sufferers, and one seriously, and perhaps permanently injured, by the hemorrhage, pain, &c. to which she was subjected. Others, with less robust constitutions, would probably have perished very speedily; and we have, ourselves, seen a young female of good constitution perish in a few days from the continued irritation of a placenta, retained by a premature spasmodic contraction of the cervix uteri, where no hemorrhage ensued.

VII. CHEMISTRY.

68. *Passage of Substances into the Urine.*—Dr. Wœhler has written a memoir on this subject, which obtained the prize, offered by the Faculty of Medicine of Heidelberg. The experiments were made upon dogs, which were killed, after the ingestion of the different substances, by means of hydrocyanic acid, as affording the quickest and easiest death; the urethra being immediately tied upon the extinction of life, to prevent the escape of the urine. We shall notice his principal results.

Simple Bodies and Inorganic Compounds.—*Iodine.*—This substance passes into the urine, changed to hydriodic acid. In one instance, a bitch that was suckling her young ones, was forced to swallow four grains of iodine. The poison proved fatal to one of the puppies in five hours, and, upon examination, its urine, and the milk in its stomach, gave traces of the presence of iodine.

Alkaline Carbonates.—These substances being good remedies in cases where a morbid redundancy of uric acid prevails in the urine, physicians have had frequent opportunities of observing their passage into that secretion.

Hydrosulphate of Potassa.—This salt may be discovered in the urine, after an alkaline sulphuret, or flowers of sulphur have been taken. It is easily detected, by adding muriatic acid to the urine, and placing over the containing vessel, a piece of paper wet with acetate of lead.

Chlorate of Potassa.—This salt also passes into the urine. A dog, after taking a drachm of it, was killed after the lapse of four hours. The bladder contained about half an ounce of very pale urine, which, being evaporated to one-half, afforded a considerable quantity of the chlorate in crystals. The stomach showed no trace of inflammation. Like other salts of the same class, it augments the secretion of urine.

Nitrate of Potassa.—A horse was killed four hours after the ingestion, on an empty stomach, of five ounces of this salt. A part of the urine was evaporated to the consistence of sirup, and then subjected to the action of alcohol. Crystals were obtained from the alcoholic solution, which proved to be nitre.

Ferrocyanate of Potassa.—This salt has been frequently observed to pass into the urine, and is easily detected by the salts of iron, which strike a blue colour with it. When, however, the salt is present in minute quantities, it cannot be detected by the simple addition of a ferruginous salt, but can only be made manifest by a preliminary separation, by an acid, of certain ingredients of the urine, which, precipitating at the same time with the Prussian blue, conceal its colour.

Subborate of Soda, or Borax.—This salt passes into the urine, as was proved by an experiment of Tiedemann and Gmelin.

Muriate of Baryta.—This salt is capable of finding a passage into the

urine; but, in an experiment on a horse, made by TIEDEMANN and GMELIN, it was less abundant in that secretion, than in the serum of the mesenteric veins and vena porta.

Silica.—BERZELIUS was the first to announce the presence of silica in the urine, supposing it to be derived from the water which we drink. By an experiment of WŒHLER, consisting in the administration of five ounces of silicated potassa to a horse, he proved that this earth might pass in considerable quantities into the urinary secretion. The stomach of the animal was violently inflamed.

ORGANIC COMPOUNDS.—VEGETABLE ACIDS, AND THEIR SALTS.—*Oxalic Acid.*—A dog took fasting, in a cake made of bread and meat, two drachms of oxalic acid in powder. Neither vomiting nor any other inconvenience was experienced. Eight hours afterwards, the animal was killed, and the urine gave indications of the presence of oxalic acid, and oxalate of lime. The secretion was also remarkable, in containing a large quantity of albumen.

Tartaric Acid.—A dog was killed five hours after the ingestion of two drachms of this acid. The urine was more acid than natural, but no albumen was present. It proved to contain, in considerable quantities, both tartrate of lime and tartaric acid.

Citric and Malic Acids.—MORICHINI asserts, that after having drunk freely of lemonade, he found so large a quantity of citric and malic acids in his urine, that it appeared to be nothing else than a solution of those two acids. Dr. WŒHLER, however, is of opinion, that it must have contained the usual constituents of urine, such as phosphoric acid, urea, and the usual salts; and that MORICHINI must have been misled by the paleness and dilute state of the secretion. The journal from which this statement is taken, reports *nitric* and malic acids, as those present in MORICHINI's experiment; but here *nitric* is evidently misprinted for *citric*.

Gallic Acid.—The urine of a dog, which had swallowed a drachm of gallic acid, proved to be abundantly impregnated with the acid. Tested by the permuriate of iron, it instantly became of a black colour.

In the case of a patient, suffering from a calculous affection, and who was taking soda, soap, uva ursi, and bark, the urine became dark violet by exposure to the air. The colour was supposed to arise from the gallic acid, contained in uva ursi.

EMMERT found, that the urine of a patient, to whose skin a decoction of the false Angustura bark had been copiously applied, acquired a deep green colour, upon the addition of salts of iron; thereby demonstrating the presence of gallic acid.

The urine of persons, who make use of ferruginous medicines and rhubarb at the same time, is apt to assume a black colour. This arises from gallic acid, which, according to BRANDE, is contained in large amount in rhubarb.

Succinic Acid.—Half a drachm of this acid was given to a small dog, and at the end of five hours, the animal was killed. The urine, upon examination, proved to contain succinic acid.

Benzoic Acid.—It was proved long ago by FOURCROY and VAUQUELIN, that the urine of horses, cows, camels, and other herbivorous animals, contains benzoic acid; but the point is contested, whether it is a product of digestion, or introduced, ready formed, with the food. VOGEL, having detected its presence in the urine of children at the breast, and found it in the urine of the rhinoceros, though absent in that of the elephant, both animals being fed on the same food, is disposed to maintain the former opinion. Without pretending to decide this question, it is at least demonstrated by Dr. WŒHLER's experiments, that benzoic acid, taken into the stomach, passes into the urine in large quantities, without decomposition.

Vegetable Alkaline Salts.—Dr. Wœhler swallowed, in solution, a drachm of acetate of soda. His urine, voided at the end of an hour, was acid; but at the termination of the second hour, it had become distinctly alkaline, and effervesced with acids. That voided an hour later, had returned to its ordinary acid state. Dr. Wœhler states, that this experiment was repeated, a number of times, by his friends, and with considerable quantities of the salt, and in every instance, without exception, the urine at first always acid, became alkaline.

Dr. Wœhler states, that the same results were obtained with other vegetable salts, in experiments repeatedly made as well on himself and other persons, as on dogs. Bitartrate of potassa (cream of tartar), neutral tartrate of potassa, boro-tartrate of potassa-and-soda (soluble cream of tartar), and tartrate of potassa-and-soda (Rochelle salt), taken in the dose of three drachms, were converted, by their passage into the urine, into alkaline carbonates. Sir G. Blane asserts the same thing respecting the citrate of potassa; and it is probable that a similar change takes place in all the vegetable alkaline salts. Dr. Wœhler has, also, often remarked, that the continual use of acetate of potassa by the sick, renders the urine alkaline, and by saturating the natural acidity of this secretion, precipitates the earthy phosphates.

Supersalts are converted into carbonates only in part: at least this is the case with cream of tartar. After the ingestion of this salt, so long as the urine remains alkaline, tartaric acid cannot be detected; but upon the return of the usual acid properties of the urine, this acid may be found.

Urine, which has become alkaline by the ingestion of a vegetable salt, is usually rendered turbid immediately on cooling or soon after, in consequence of the deposition of the earthy phosphates. After swallowing several drachms of a vegetable salt, the urine, treated by an acid, is usually as effervescent as Champagne.

Dr. Wœhler states, that one of his friends remarked to him, that when he ate cherries, his urine lost its acid quality, and became effervescent with acids. The doctor, upon trial, verified the statement of his friend, and was at a loss to explain the result, unless by supposing the existence of a vegetable alkaline salt in this fruit. To determine the value of this conjecture, he chared a pound of cherries, and incinerated the charcoal formed. The ashes were then treated with water, and afforded an alkaline solution, which consisted of carbonate of potassa. Dr. W. expresses his surprise, that this alkali, though in considerable amount in cherries, should have escaped the observation of Berard.

Cherries contain, besides, a free acid, even the sweet varieties, for their juice reddens litmus paper; unless indeed this effect should depend on the presence of a supersalt. Sweet cherries render the urine much more alkaline than sour ones, as we should a priori suppose. The urine of an individual, who had eaten a pound of sweet cherries, became nearly as alkaline, as it would have been, if he had taken several drachms of a vegetable alkaline salt.

Strawberries, also, render the urine alkaline, but not to the same degree as cherries. This property probably belongs to many of the sweet fruits, or, at least, to all those which contain an alkaline vegetable salt. On the other hand, those which contain free acids only, do not possess this power; as, for example, gooseberries and lemons.—*Journ. des Progrès des Sciences Med.—Vol. I. and II.* 1827.

VIII. MEDICAL JURISPRUDENCE.

69. *Rupture of the Duodenum.*—We give the following article a place in this department of our Journal, not, as will be seen, on account of the case therein narrated having been made a subject of legal inquiry or criminal prosecution; but in order to add to the stock of information of the medical jurist, by showing him, that ruptures and lacerations of internal parts are not the necessary effect of external injury, or attempts to maim and disable a fellow being; and to guard him against the prevalent error, in all reasonings, of regarding two coincident circumstances or events, as being in the relation to each other of cause and effect. In the instance detailed below, had the person who died been engaged in any struggle or exchanged blows with any other individual, during his paroxysm of anger, there is little doubt but that the latter would have been tried for homicide.

M. Bernard Filioca, aged 48 years, of a florid complexion, after having dined heartily, on the third of February, of French beans, meat, and an apple omelet, went to a coffee-house, where he played at billiards, and drank beer and punch. An altercation of some bitterness occurred there, and he was thrown into a violent fit of anger. On retiring, with one of his friends, he complained suddenly of a great pain in the stomach, which increased and became so violent as to deprive him of the power of standing, and it was found necessary to carry him into an apothecary's shop, where he had administered to him an antispasmodic draught. He had scarcely swallowed a few spoonfuls of it, when he vomited and was abundantly purged. His extremities were observed to become suddenly very cold. He was taken to his own house. Mr. Dupuy found him stretched on his bed, his limbs of an icy coldness, and complaining of a violent pain in the epigastrium, a weight in the belly, and a desire to go to stool. Tea and an injection had been given him. There was, however, no alvine evacuation, notwithstanding all his efforts. The physican could not, at any time, feel the pulsations of the radial or carotid arteries, or the beating of the heart. The countenance was not altered, and the patient gave, with precision, an account of himself. He renewed the attempt to go to stool, sat upon his bed, and declared himself better. The respiration was very moderate, but gradually diminished, and he died without uttering a groan.

On examining the body next day, there were found ecchymoses over the whole surface; the lungs were engorged and adhered to the pleura; the heart was voluminous and abounding in fat, and the aorta a little dilated. Gas and a grayish liquor were found in the abdomen; the liver, of an enormous size, was gorged with blood; the gall bladder was empty; traces of inflammation were perceptible in the stomach; the mucous membrane of the duodenum was much inflamed, and at the distance of four inches and a half from the pylorus, a transversal fissure, extending a third of the circumference of the intestine, and situated at its convex part, was perceptible: the parietes of the small intestines were very thin throughout; the other organs were in a healthy state.—*Journ. Medical de la Gironde, Sept.* 1826.

In the March number of the same Journal, is detailed the history of a case of spontaneous rupture of the vena cava abdominalis, in a female thirty years of age, of a nervous temperament, and subjected at different times to mental uneasiness. She died a few hours after the attack, which was ushered in by acute pain in the abdomen.

70. *Medico-legal Report of an Exhumation, made three years after Interment.*—By Dr Eugene Delmas. The following is taken from the Edinburgh Journal of Medical Science, being translated from the *Ephemerides Medicales of Montpellier.*

"A Piedmontese, named Bonino, formerly a soldier, aged forty-six years, had retired to a village near Montpellier. He disappeared in 1823, and a report spread that he had gone to Spain; but soon after it was whispered that he had been assassinated by a girl with whom he lived, and a person named Diamont, who was known to have been long intimate with her, and who had married her nine months after the disappearance of Bonino. Two years passed away, however; after which, in 1826, the legal authorities being informed of the rumours spread abroad, caused a search, and a body was found in the garden of the suspected person. In the first place, it was necessary to ascertain if the body was that of Bonino, which could be recognized by one peculiar circumstance, namely, a sixth finger on the right hand, and a sixth toe on the left foot. I was charged with the examination of the affair, and the following report is the result. Diamont and his wife were tried and condemned by the court of assizes, at Montpellier, on the 26th August, 1826.

On the 30th April, 1826, at the request of the public administration, we went to the Commune of Sussargues, to proceed to the exhumation of a dead body, discovered in a garden. The earth being removed, we found, at the depth of eighteen inches, a human skeleton lying on its back. The head, placed towards the north, was slightly bent forward; the lower jaw was separated from the upper. The arms were crossed upon the breast, so that the right passed a little over the left. The ribs, still retaining the form of the thorax, were separated from the sternum, which we found lying on the opposite vertebræ. Some black hair, and a metal button, were imbedded in a moist, earthy matter, which covered the anterior surface of the sternum. The vertebral column, unbroken, had retained its relations with the head and pelvis. The inferior extremities, stretched out, and on the same level as the trunk, followed the direction of the axis of the body, and inclined towards each other. The right foot which alone we saw in its place, was still in the shoe, a little bent on the leg, and inclined to its outer edge; the left had been removed with the shoe, in which we found only a part of it.

The head, removed from its position, was dry in the frontal region, while the occipital region was still moist, and lubrified by a fatty matter, amongst which we found some black hair: attentively observed, it presented to us, at the right external orbitar angle, a deformity arising from an injury long anterior to death, since nature had produced a cure; we thought from this that there had been a cicatrix in this part. Another lesion of the bone existed on the left side of the coronal suture, but it appeared of ancient date. The left temporal bone, especially, fixed our attention: its squamous portion, almost separated from the parietal bone, was divided into three portions by three cracks, which proceeded from the circumference of the bone, and, before the external auditory canal, united to a fourth, which, turning round the base of the zygomatic process, terminated in the glenoid cavity. The form of this fracture, the soundness of the zygomatic arch and mastoid process, induced us to suppose that it was made with a blunt instrument of a small size. From the absence of any apparent operation of nature to effect a cure, from the separation of the osseous pieces, and the oozing which took place through the different points of the fracture, we think it had taken place at a time very near death. We add, even, that the injuries we observed were the results of a violent blow, that must have brought on a cerebral commotion, which, without considering other accidents, would instantly deprive the individual of the use of his senses, and every means of defence.

The shoes in which we found the bones of the foot, some pieces of woollen cloth surrounding the vertebræ of the neck, metal and wooden

buttons, a knife, of which the blade was folded in the handle, and found at the left side of the breast, some fragments of cloth and velvet; all these inclined us to believe that the body had been buried, covered with a part, at least, of its clothes.

Although the time necessary for the complete decomposition of a dead body be very variable, and no exact rule can be established in respect to this, seeing that climate, moistness or dryness of soil, the greater or less depth of graves, circumstances relative to the state or temperament of individuals, all occasion much difference, we endeavoured, nevertheless, to determine how long the skeleton in question had been buried. The general opinion is that, in a temperate climate, when no peculiar circumstance hastens or delays decomposition, it is completed in three or four years. In comparing the state in which we found the parts at the time of exhumation, with what has been said on this subject, we think we may advance that the body has been buried about three years and a half. We indeed remarked what some authors point out as taking place in the third period, that begins after the third year; namely, the entire disappearance of gaseous products, the fetid odour replaced by an odour of mouldiness, and merely a remains of earthy, fatty, friable, brownish and black matter. The only soft parts which we found were vertebral ligaments, the composition of which, from being more nearly of the nature of bone, ought to be the last to disappear.

As neither time nor place permitted an attentive examination of the other parts of the skeleton, we put all the bones that we could find into a bag, to which the legal seal was applied.

On the 5th of May, we went to the judges' chamber, to continue the examination of the bones. We found all the vertebræ, the ribs, and bones of the pelvis, which were soon articulated. Wishing to determine to what sex the skeleton belonged, we examined these different parts. By the width of the passages being small compared to the depth of the pelvis, the outlet narrow, cordiform, and terminated in a point forwards, a formation that depends on the direction of the ischia, which in their descent converge much towards each other, by the oval and very elongated form of the obturator holes, we were induced to believe that it belonged to a man. We are confirmed in our opinion by the small separation of the descending rami of the pubis, which had their anterior face directed outwards; whilst in the female it is broad and flat. These circumstances were in relation with the length, the consistence, and development of the bones.

The sex being known, we endeavoured to discover the man's age. The complete development of the bones, that of the processes to which the muscles are attached, and also the jaws; the state of the teeth, the number of which was complete, with the exception of the fourth molar tooth of the right side of the upper jaw, which had been long out, as the alveolar cavity was ossified, and the adjoining teeth had not changed their direction, although they were not supported: these circumstances induced us to say that he had attained his fortieth year. According to the comparative table of Professor Sue, we determined that the height was about five feet five inches. With the exception of some bones, the extremities were complete, and we articulated the right foot which we had preserved in the shoe. Two sesamoid bones, which are common enough, were the only additional ones that we found. The left foot having been removed in digging, some bones of it were lost. We found only the calcaneum, astragalus, scaphoid, and cuboid, the five metatarsal bones, and three phalanges: this prevented us from articulating it, and ascertaining if there was any thing peculiar. Having separately examined the bones that remained, we found the head of the fourth metatarsal rounded, extending outwards, and presenting a small

articular surface, which might have been produced by an extra articulation, but not having seen in what manner this bone was articulated with the first phalanx, we could not determine, if there had been a sixth toe attached to it.

Except some small bones of the carpus, we found all those of the right hand. The fifth bone of the right metacarpus at once attracted our attention: shorter and thicker than that of the other hand, its extremity towards the phalanx separated into two parts, one of which, truly articular, smooth, narrow, rounded, and prominent, had the direction of the axis of the bone; whilst the other, corresponding to the cubital edge, formed with it an angle of about eight degrees: not continued so far as the first, it was equally smooth, and presented an articular surface, which differed from it only in its less rounded form. Having tried to articulate the first phalanx of the little finger, it fitted exactly upon the first articular head, and presented upon the side corresponding to the second a depression, the obliquity of which was in relation with the direction that we have assigned to this second surface. This examination of the different parts of the fifth finger leaves no doubt of the nature of the anomaly which it presents: thus we think we may affirm, a sixth finger must necessarily have existed, although we did not find the bones that composed it. The left hand, of which we found all the bones, except some bones of the carpus, presented no peculiarity.

Such are the results which we obtained: they conduct us to the following conclusions:

1st. The skeleton which we disinterred had been buried from three years to three years and a half, covered with its clothes.

2d. This skeleton belonged to a man about the age of forty to forty-five years, and of the height of five feet five inches.

3d. This man had six fingers on the right hand, the sixth should have been placed beside the little finger; and, if there existed an additional toe on the foot, which we cannot affirm, its place would be on the left foot, on the outside of the little toe.

4th. Death was occasioned by a violent blow given by a blunt instrument, which fractured the left temporal bone.

The value of anatomy, and the advantages derived from it every day by medicine generally, and especially by medical jurisprudence, cannot be denied. The fact just related is a new and remarkable proof of this. It was this science alone that produced evidence on the trial: by it the skeleton reproduced with its deformities, placed the victim in presence of his assassins, and fully convinced their judges.

Great anomalies have been observed regarding supernumerary fingers: they have been sometimes seen supported by a sixth metacarpal bone; at other times resting on the fifth of these bones, or on the first phalanx of the little finger; sometimes also, but more rarely affixed immediately to the radial edge. M. Boyer relates, that he has observed them forming a bifurcation upon the first phalanx of the thumb; and I have myself met with a fact of this nature. It has also been observed that additional fingers are rarely found on both hands. Thus, in some persons, there may be on one hand a finger very complete, having its bones and muscles, that permit it to execute easy motions; whilst on the other an imperfect finger exists, but little developed, or perhaps only a mere appendage, that leaves no trace on the bone to which it adheres. The same anomalies exist with regard to additional toes.

The present case presents a new example of these aberrations of nature. Bonino had, on the right hand, a sixth finger, formed of one or several phalanges, and whose articulation with the fifth bone of the metacarpus presented a pretty large surface; but, it was on the left foot that a sixth toe

was found, although the articular surface of the fifth metatarsal bone was less evident than that of the fifth of the metacarpus. Upon the right foot and left hand, on the contrary, there was nothing: in reality, there might have existed an excrescence during life, but if so, it was not sufficiently developed for any traces of it to be recognized three years after death.

This fact seemed to me interesting, by the circumstances with which it was attended; as but few such are found in the annals of justice, and I thought it my duty to publish it. I do it with so much more confidence, as after having fulfilled, in this unfortunate affair, the so painful duties of a medical jurist, I had the good fortune to acquire, by the confession of the guilty persons, complete security of conscience, in the certainty that I had not been deceived."

MISCELLANEOUS ARTICLES.

LETTER OF DR. MERRILL TO THE EDITORS.

NATCHEZ, 28th MARCH, 1827.

To the Editors of the North American Medical and Surgical Journal.

Gentlemen—Having lately seen in the "Medical Recorder," some remarks on my communication, published in your fourth number, in which I am charged with having made erroneous statements, I deem it my duty to forward you the enclosed certificates, relative to the only important point in dispute.

From these, it will appear, that of the *seven* cases, reported by the sexton in September, the only two of yellow fever, (attended by a physician) were the *Wallaces*, who occupied a store upon Butler's wharf, were taken sick in August, and died on the 3d of September on the hill: and that the only additional case, during that month, that received medical aid was *Loring Morton*, who had previously occupied a store upon the new wharf, but died also upon the hill. It will also appear, that of the ten cases reported in October, four were denominated *yellow* or *malignant fever* by the attending physicians; the two first of these occurred more than half a mile above the landing, and the remaining two were Dr. Denny's cases, on the 17th and 24th of October, both of which occurred under circumstances of peculiar exposure, as stated in the letter of M. Robetaille, Esq., herewith enclosed.

Had the notice taken of my communication by the editors of the "Recorder," been tempered by that courtesy and liberality, which we are accustomed to look for in the conductors of journals of science, a more particular defence of it would, perhaps, have been necessary; but under existing circumstances, I cannot, in justice to myself, take any further notice of their remarks.

With the greatest respect,
I am, your most obedient servant,

A. P. MERRILL.

ROBERT STEWART'S CERTIFICATE.

List of Deaths under the Hill at Natchez, during the months of September and October, 1825.

Sept. 3d. Alexander Wallace, aged 24 years—Yellow fever. Certified by Dr. T. I. Chew.

Sept. 3d. J. B. Wallace, aged 35 years—Yellow fever. Certified by Dr. T. I. Chew.

Sept. 15. Ursula Devine, aged 11 years—of fever. Certified by Mrs. L. Devine.

Sept. 17. Justin Higgins, aged 30 years, disease supposed to be malignant fever. Certified by Mr. John Scott.

Sept. 18. Loring Morton, ————, Bilious fever. Certified by Dr. S. Gustine.

Sept. 20. James Adams, aged 25 years—Bilious fever. Certified by Mr. Wm. Adams.

Sept. 25. Charles Dickson, no physician, disease unknown.

Oct. 8. Miss P. Biggs, ————, Bilious fever. Certified by Dr. I. S. Cornell.

Oct. 10. Wm. Adams, aged 50 years—Remittent fever. Certified by Dr. R. W. Walker.

Oct. 10. Henry Stephens, aged 25 years—Malignant fever. Certified by Dr. T. Hunt.

Oct. 13. James Griffin, aged 9 years—Malignant fever. Certified by Dr. A. P. Merrill.

Oct. 13. John Chapman, ————, Ague and fever. Certified by Mr. John Scott.

Oct. 14. John M'Coy, aged 27 years, disease unknown. Certified by Mr. John Scott.

Oct. 14. Wm. Berdit, aged 20 years—Bilious fever. Certified by Mr Anthony Junker.

Oct. 15. James Danniels, aged 35 years—Remittent fever. Certified by Dr. T. S. Chew.

Oct. 17. James Camden, ————, Malignant fever. Certified by Dr. Denny.

Oct. 24. William Harrington, ————, Yellow fever. Certified by Dr. Denny.

I certify, that the above is a correct list of the deaths that occurred under the hill at Natchez, during the months of September and October, 1825, to the best of my recollection, and that *Henry Stephens*, mentioned above, died at the tan-yard, about half a mile above the principal part of the city, and *James Griffin*, at the steam saw-mill, still farther up the river.

ROBERT STEWART, *Sexton.*

Natchez, 20th March, 1827.

BENJAMIN WADE'S CERTIFICATE.

I certify, that in the month of August, 1825, Alexander Wallace was taken sick under the hill. A few days after he was so taken, he was removed to my house on the hill, accompanied by his cousin James B. Wallace. Immediately after the removal of Alexander Wallace, James B. Wallace was also taken, and both expired at my house in about a week after being attacked.

BENJAMIN WADE.

JOHN W. TREMBLY'S CERTIFICATE.

Natchez, March 26, 1827.

I certify, that Loring Morton occupied a store upon Butler's Wharf under the hill, during the summer of 1825: that when the sickness appeared at that place, he went to the country, but returned to the city about the 10th of October; was taken sick the same day upon the hill, where he afterwards died at the house of Jacob Fowler, near the hospital.

JOHN W. TREMBLY.

LETTER OF M. ROBETAILE, ESQ.

Natchez, March 26, 1827.

Dr. A. P. MERRILL.

Dear Sir,—Agreeably to your request, I will state for your information what I know respecting the two cases of fever which occurred at our landing, in the persons of Harrington and Camden. The former arrived here between the 1st and 10th of October, 1825. Having some property on board his boat consigned to me, I was apprised of his arrival, and called on him in his boat: he then lay very much indisposed with either a remittent or intermittent fever. I asked him how long he had been sick, and his reply was, "some time." He lay in his boat some several days afterwards, and then was removed to a house adjoining Butler's new wharf, and by me put under charge of Dr. DENNY, and died some time about the 25th of October, of black vomit.

The latter person, (Camden,) was taken sick while in the employ of a Mr. Doyle, in a boat lying opposite Butler's Wharf, about three weeks after his arrival at the landing, and died a few days after of yellow fever.

With regard to the existence of water under the store-houses upon the wharf, I have to state, that it had accumulated during the season to the depth probably of from one to five or six feet; and when afterwards drained off, it emitted such an intolerable stench, as to drive many of the inhabitants from the vicinity.

Very respectfully yours,

M. ROBETAILLE.

MEDICAL SOCIETY OF PHILADELPHIA.

At the Meeting of June 16th, 1827, the following Preamble and Resolutions were proposed:

From the natural and excusable anxiety of persons labouring under disease, to seek relief wherever it may be found, it has happened in every age within the memory of man, that secret remedies, professing to be invariably successful, have enjoyed more or less vogue. The City of Philadelphia is at the present moment unusually well supplied with such nostrums, which, according to the representations of their inventors and vendors, are as unerring as the established laws of nature. Though we feel a hesitation in admitting the claims to originality set up by those inventors, in consequence of their very imperfect opportunities of learning any thing connected with the science of medicine; yet we have but little doubt that they are possessed of articles known to the profession. It has frequently happened that medicines thus seized upon are amongst the most potent of the materia medica, and are pernicious or serviceable according to the skill with which they are used. Arsenic has formed the basis of most of the empirical cancer powders and plasters, and corrosive sublimate the base of the pills and syrups for syphilis and cutaneous disorders.

The enlightened and liberal physician has an important duty to execute; he has, when remedies are presented under imposing circumstances, to inquire into their merits and to give them a candid examination; so that on the one hand useful things may not perish by neglect, and on the other, such as are inefficacious or injurious may be justly understood, and avoided accordingly. He has also to watch over the interests of his own profession; and to be very well assured, before he will concede the point, that the greatest intelligence, opportunities, diligence, and zeal, in learning the treatment of diseases, may be surpassed at a single effort, by minds illuminated neither by native intelligence nor by appropriate and protracted studies.

No one who is acquainted with the history of medicine, can for a moment doubt the liberality of its followers in their intercourse with other conditions of people, or the readiness with which they make large sacrifices for the benefit of mankind. Most of the improvements in medicine are concessions to the cause of humanity. Physicians, in becoming the instruments of the dissemination of the vaccine disease, lost, by the consequent disappearance of small pox, their most fruitful source of revenue, and an employment to thousands. Many examples of a similar description might be adduced, but this is sufficient to illustrate the disinterestedness and humanity of the profession: and to furnish a reply to a charge of selfishness, when its members are fastidious in adopting, or even reject nostrums and

secret remedies; for the reason that they know not what they prescribe, and are always exposed to the chance of administering articles whose powers may vary continually from the caprice of their manufacturers.

The Medical Society, from the foregoing considerations, and with the view of gaining information upon the effects of the more popular empirical articles sold in Philadelphia, resolve as follows:—

1st. That a Committee of five persons be appointed, to inquire into the remedial value of the more prominent specifics now sold in Philadelphia, under the assumed names of Panacea, Catholicon, Minerva Pill, &c.

2d. That the order of inquiry of this Committee shall be, to address letters to the several regular practitioners whose certificates have appeared in behalf of such specifics, requesting a detailed statement of the information they possess in regard to the names, constitution, age, and previous treatment of the patients alluded to; of the diseases they have found those medicines most successful in, and of the diseases in which they have found them to fail.

3d. To obtain from all the practitioners of the city who have witnessed the exhibition of such medicines, well authenticated documents in detail concerning their effects in the several diseases for which they are given.

4th. To solicit from intelligent practitioners in the country, and members of this society generally, communications of a similar purport.

5th. To raise, by contribution and annual subscription, a fund to defray the expenses of the aforesaid Committee.

The Society adopted the foregoing preamble and resolutions, and appointed Drs. Horner, Harris, Jos. Klapp, Meigs, and Bell, as the committee on them, and with power to fill up vacancies.

Extract from the minutes.

JNO. R. W. DUNBAR, *Recording Secretary.*

Circular of the Committee.

Hall of the Medical Society of Philadelphia.

Sir,—We have the honour of calling your attention to the foregoing preamble and resolutions of the Medical Society, adopted at the meeting of June 16th, 1827. As these resolutions bear upon points all important to the interests of humanity and to the comfort and dignity of the Medical Profession here and elsewhere; it is hoped that you will make an early communication to the Committee of all such information as you possess and can with propriety impart. In addition to the information indicated by these resolutions, we should be pleased to learn the whole number of cases that you have seen treated with such medicines, or the treatment of which, properly authenticated, has come to your knowledge, and the evident effects produced on the functions of the system by them.

It has been thought unnecessary to present further interrogatories to you, from an impression that your own intelligence and candour will dictate the course, in your answers, best suited to instruct the Committee, and to qualify it to execute its duty in a way satisfactory to the society, and conducive to the end proposed.

We have the honour to be,
Very respectfully, your ob't serv'ts,

W. E. HORNER, *Chairman.*
THOS. HARRIS,
JOS. KLAPP,
CHAS. D. MEIGS,
JOHN BELL.
Committee.

MEDICAL CONVENTION, NORTHAMPTON, MASS.

[We have been politely furnished by the editors of the Medical Recorder, with a printed slip, containing an account of the proceedings of this Convention, from which we make the following abstract.]

The Convention met on Wednesday, the 20th of June, at nine o'clock in the morning, and continued its meetings by adjournment, until the evening of Thursday the 21st. The Delegates present, were:—

A. Mann, M. D. President of the Maine Medical Society.

John D. Wells, M. D. from Bowdoin College, Maine.

James P. Chaplin, M. D. from the Mass. Medical Society.

Henry H. Childs, M. D. and *Stephen D. Williams*, M. D. from the Berkshire Medical Institution.

Reuben D. Mussey, M. D. from the Medical Institution, Hanover, New Hampshire.

M. Spalding, M. D. from the Medical Society of New Hampshire.

Samuel B. Woodward, M. D. and *Geo. Sumner*, M. D. from the Medical Society of Connecticut, and

Usher Parsons, M. D. from the Medical Institution, Brown University.

James Jackson, M. D. of Boston, was appointed President, and Reuben D. Mussey, M. D. of Hanover, N. H. secretary.

Two distinct subjects came before the convention; first, the qualifications requisite for the commencement of Medical Studies; and secondly, the Medical Studies, and other qualifications, requisite to obtain a license or degree.

It was agreed to recommend, that every student of medicine, who has not received the degree of A. M. shall present to the respective boards of examination of the several states, and of Medical Institutions, satisfactory testimonials, that, before the commencement of his medical studies, he possessed, in addition to a good English education, sufficient knowledge of the Latin language to read the Eneid of Virgil, and the select orations of Cicero, and a respectable acquaintance with geometry and natural philosophy.

Candidates for a license shall have studied, under the direction of some respectable licensed practitioner, three years, if possessing the degree of A. M., or four years, if without that degree. They shall also have attended one course of lectures, in some incorporated medical institution, within the period of their medical pupilage, on the following branches, viz: Anatomy and physiology, surgery, chemistry, materia medica, the theory and practice of physic, and midwifery. On presenting themselves for examination, they shall produce certificates from the physician with whom they studied, that they have complied with the above requisitions; and furnish satisfactory evidence of good moral character, and of having attained the age of twenty-one years. They shall, also, write and defend a thesis on some medical subject.

Candidates for the degree of Doctor of Medicine, besides complying with the above requisitions, shall have attended an additional course of lectures, shall publicly read and defend a thesis, and be examined on botany and medical jurisprudence.

It was made the duty of the several delegates, to submit the foregoing resolutions to the medical societies and institutions which they represent, for their approval. If approved of by a majority, they shall go into operation; and a perfect reciprocity shall subsist between those bodies that shall adopt them for future regulation. They shall also be sent to all the other medical societies and institutions in the United States; and, if adopted by them, the principle of reciprocity shall be extended to them also.

A committee of correspondence was then appointed, consisting of Doctors J. Jackson, J. C. Warren, and J. P. Chaplin, to make these communications, and to publish the proceedings of the convention, of which 5000 copies were ordered to be printed.